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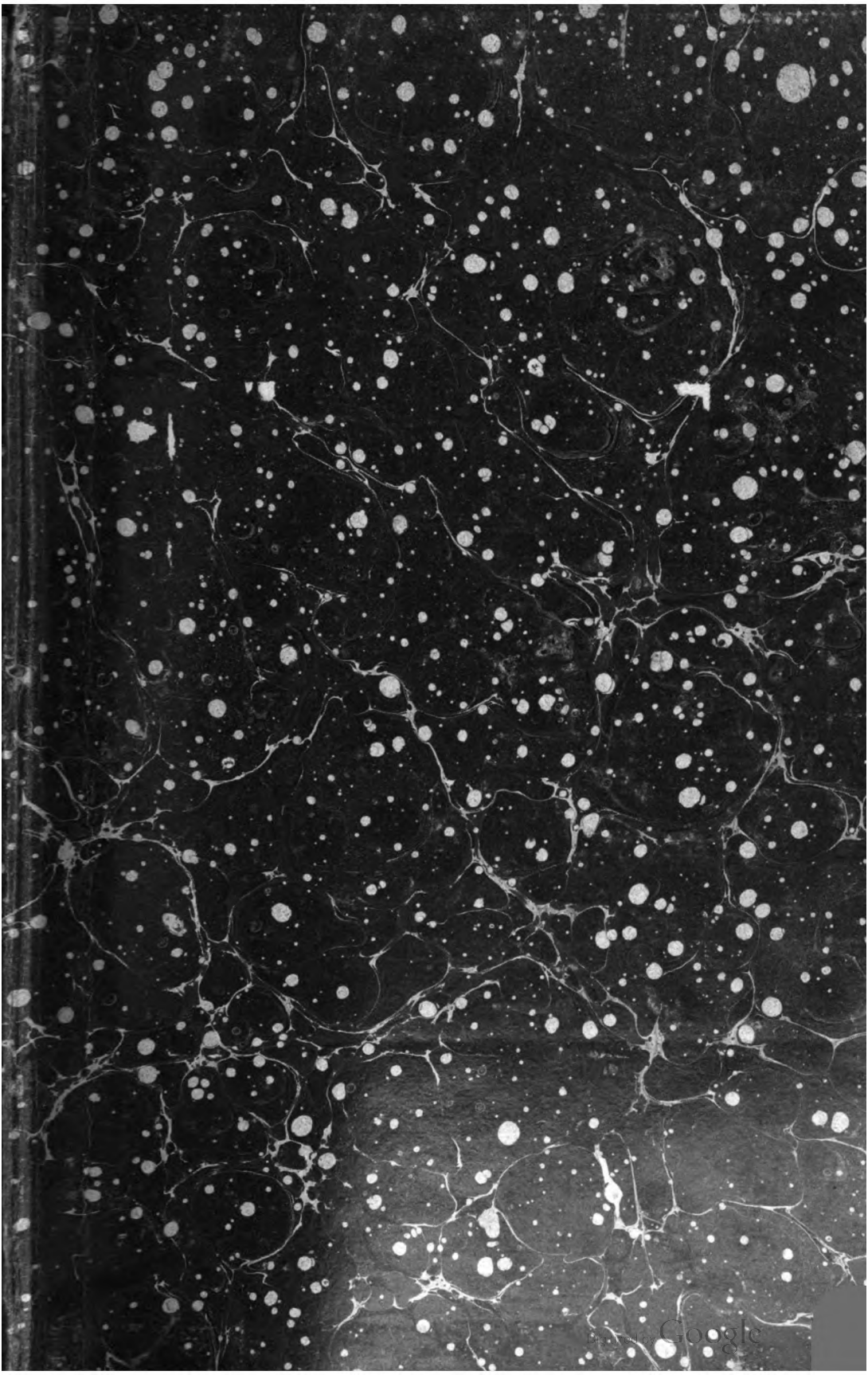


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THE  
PEDAGOGICAL  
SEMINARY.

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INSTITUTIONS AND PROGRESS.

EDITED BY

G. STANLEY HALL,

President of Clark University and Professor of Psychology and Education.

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# THE PEDAGOGICAL SEMINARY.

Founded and Edited by G. STANLEY HALL.

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## EDITORIAL.

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With the first number of a new volume, we present our readers with two articles on subjects of general importance.

The first develops a distinction between the large fundamental muscles that move the large joints, that unfold first and represent to some extent motions which man has in common with the higher animals, are the last to be affected in all degenerative motor diseases on the one hand and on the other, the smaller muscles of face, fingers, articulation apparatus, which are called peripheral or accessory, develop later, and are functionally superposed upon the more central system, are quite liable to be involved in school-bred automatisms and chorea, represent finer, more rapid, specialized and exact movements, and whose changing tensions are very closely connected with thought and all psychic activities.

Mr. Burk has for the first time pointed out the relation of this distinction to Flechsig's recent differentiation between the projective system and the "association fibres" of the brain, both ends of which are in the cranium, and which connect areas of the posterior and especially frontal areas, to the possible functions of Vulpus' transverse fibres of the middle layer, and also to the higher and third level of Hughlings Jackson. He then proceeds to state the pedagogic implications of this view point. (P. 20.)

Selecting the hand, and leaving speech development for later and more detailed treatment, he shows how recent research gives it a far higher function than had hitherto been conceded, as the best index of intellectual power, and traces in some detail and with much recent new matter, its evolution from a foot as coincident with that of intelligence, and by implication its importance in education. On the whole, the article summarizes and brings into new and very suggestive relations to each other and to school work and educational philosophy generally, a great variety of special investigation not readily accessible.

In the article on Inhibition, the author briefly indicates the views of Herbart, Benecke, Taine, Roux and others who have studied the problem of the arrest of one function by another which absorbs more than its share of energy, and undertakes to explain restlessness. Suggestive as the article is, it only opens to others a glimpse into a far vaster and unexplored realm, further treatment of which may be expected in these pages.

Dr. Lukens, who had been connected with Clark University for several years, spent the last academic year travelling in Europe, with the purpose of seeing as many educational institutions and men of different countries prominent in pedagogical work as possible. At the editor's request he has jotted down, very informally, some of his observations, and expressed with great frankness his impression of men, opinions, and methods in a way sure to be helpful.

Many reviews and book notes are crowded out and will appear in the next number.

## FROM FUNDAMENTAL, TO ACCESSORY IN THE DEVELOPMENT OF THE NERVOUS SYS- TEM AND OF MOVEMENTS.

By **FREDERIC BURK**, Fellow in Clark University.

Two tendencies in educational method have ever struggled in greater or less opposition—one based upon the logical divisions of the subject studied ; the other based upon some theory of internal order of development in the mentality of the pupil. Theoretic pedagogy has made the latter tendency its contention. Comenius, Rousseau, Froebel and others have gained the title of " reformer " essentially because they attempted to break away from a form of education determined by the logical order of subject-matter and sought to substitute for it some theory of the psychological development of the pupil as the regulative principle. It is not until the question is brought under close scrutiny of experience or of theory, that the possibility of an essential difference between the logical order of subject-matter and the pedagogical order of mental development presents itself in any convincing way.

To illustrate : in learning to read, the logical order naturally shows us that sentences are made up of words, words of syllables, and syllables of letters ; it would seem that letters being the ultimate logical simples would also be the ultimate pedagogical simples and the point of beginning for the learner. Such, indeed, was the method employed in schools universally until very recent times, and it still is widely used in some countries. But experience has shown conclusively, nevertheless, that in this matter at least, the avenue of least resistance is not upon the lines of logical cleavage, but on the contrary, it has been found that children learn to read far more readily by beginning with words or even sentences. Thus, in this case, the pedagogical order is almost the reverse of the logical order. In certain other forms of instruction, experience has as definitely established a conflict between the pedagogical development of pupil and logical order of subject which makes it doubtful that the latter is as serviceable for educational purposes as practice has often assumed.

The educational reformers — some by theoretic deductions and others by experience or by happy intuition—have attempted

to bring into clearer light a subjective order in the development of mentality. Froebel, Herbart and many others certainly have made many valuable contributions which have stood tests of experience. But we have as yet no general basis in positive science for such an order; and it would seem natural that the modern biological sciences—particularly neurology and experimental psychology—should make contributions to this problem. For the purpose of bringing together in convenient form such scattered facts in these sciences as bear directly or indirectly upon the problem, this study has been undertaken. The first chapter will review the contributions in the field of recent studies of the nervous system; the second chapter will trace the development of the human hand and attempt to correlate this development with that of the nervous system. A third will review studies upon the growth of hand motility during the school ages.

#### SUGGESTIONS FROM THE DEVELOPMENT OF THE NERVOUS SYSTEM.

It was but natural, in the early attempts to find a relation between the various structures of the nervous system and the different degrees of mentality observable in masses of individuals, that attention should have first been turned upon the grosser forms of brain anatomy—the shape and protuberances of the skull, arrangement of the convolutions, the size and weight of the brain, etc. Each of these features has been subjected to scrutinizing comparative study. Practically nothing, however, of psychological significance has thus far been obtained from any of these studies, except to render it more doubtful that any significant relation exists between these gross differences which naked eye or scales may detect, and the differences of mentality in individuals. Large differences in weight, for example, are shown to depend chiefly upon variations in the amount of non-nervous material—the supporting tissues, blood vessels, fluids, and the fatty protecting sheaths encasing nerve fibres. Recent investigation has been gravitating toward a solution in the finer microscopical structures of nervous tissue. While as yet the interpretation of facts in this field is more or less doubtful, nevertheless certain features are suggestive to psychology and education.

*Growth of the Brain in Weight.* For the sake of completeness it may be well to mention in passing the result of recent inquiries into the periods of brain growth as determined by weight. Vierordt from records of 415 males and 424 females, ranging to 25 years of age, finds that maturity in weight is practically complete at about the eighth or ninth year. The period of most rapid increase after birth, according to this in-

vestigation is from birth to four years of age. Mies<sup>1</sup> places the average weight of brains of new born males at 340 grammes and of females at 330. At maturity he calculates the average as 1,400 grammes for males and 1,050 grammes for females. The period of most rapid growth is that of the first nine months of life, during which one-third of the whole increase after birth is added. The second third of the whole increase is added between the ninth month and the twenty-seventh month. The remaining third is slowly obtained. Mies says maturity of weight is reached sometime between twenty and thirty years. Pfister,<sup>2</sup> in a study of 156 brains from birth to the fourteenth year, confirms in a general way the rate of growth as found by Mies, and his figures would indicate that the maximum weight is practically reached in the pubertal years.

While the data, from incompleteness and questionable accuracy, will not allow us to determine with absolute precision when growth matures, we may nevertheless safely conclude that the rate, rapid in embryonic life and infancy, steadily decreases; and that, in all probability, no large increment of weight is added after the ninth or tenth years.

*Growth in the Cell Body and its Processes.* The process of division by which new cells are created ceases in the embryonic period, as commonly stated, by the fifth month of foetal life. Reflection upon this fact has left a fatalistic flavor in the conclusions of many, for it seems to limit the possibilities of education. However, since the number of cells thus created reaches the billions and there is evidence of what seems millions of undeveloped cells in the brains of men in their old age, it would appear that our present stock of possibilities are by no means exhausted. The nervous matter at any age shows what seems to be stages in growth of cell body, and along with the developed cells are to be found small cells, which neurologists have generally considered an undeveloped form awaiting structure or function, education or impulse, or whatever else the inciting cause may be, to call them into active service. Kaiser<sup>3</sup> took similar sections of the cervical region spinal cord in a new born child, a boy of 15 years and an adult. The number of developed cells in the new born child was 104,270; in the youth, 211,800; and in the adult, 221,200. The number of cells which came into function during the first fifteen years of life was therefore double the number at birth. From this observation it would seem, that even in the spinal system, the earliest to

<sup>1</sup>Ueber das Gehirngewicht neugeborner Kinder. Wiener Klin. Wochens., 1889, p. 34.

<sup>2</sup>Das Hirngewicht in Kindesalter, Archiv. f. Kinderheilkunde, 1897, pp. 164-192.

<sup>3</sup>Die Funktionen der Ganglienzellen des Halsmark, 1891.



mature, growth of new powers is significantly active throughout, until the adult period at least. Vignal<sup>1</sup> finds that the cells of the foetus are distinctly smaller than those of the child and that they are more closely packed together. There is much indirect evidence for the conclusion that the cell bodies are increasing in size, though doubtless by such small increments as to elude observation by the methods employed, throughout the greater portion of adult life. Ramon y Cajal<sup>2</sup> has attempted to establish the principle that the size of a cell depends upon the number of its processes and collateral branches, that is, upon the number of other cells with which it is associated. Cajal has also offered the plausible theory that the growth energy which in early embryonic life is employed in cell division, passes, when this process ceases, into the work of forming the finer cell processes and collaterals and continues operative until senescence sets in, *i. e.*, to the number of other cells with which it is functionally associated.<sup>3</sup> There is also scattered evidence to indicate that the cell changes in chemical constituency with age. Dr. C. F. Hodge,<sup>4</sup> from a study of old and young honey bees and of the cells of a foetus, a middle-aged man and a man of 92 years, concludes that there are changes of some character shown by difference in chemical reaction. Bearing upon this point Donaldson in his resumé of fatigue says: "In childhood the amount of stored material is small, large in maturity, and small again in old age. Hence the cells would by reason of this fact have the greatest capabilities for work in the middle period. Between childhood and old age there is, however, this difference, that while in the former the non-available substances in the cell are developing, not yet having material, those in the latter may become incapable of reconstruction."<sup>5</sup>

*Growth of Finer Microscopic Fibres.* It is a speculation to which neurological theories point, that the fibres which connect different parts of the cortex, one with the other, are most likely to be concerned in some way with association and the higher forms of neuroses. As early as 1840, Remak made a study of these "tangential" fibres and concluded that no material growth of these fibres took place beyond the eighth or tenth

<sup>1</sup> *Development des Elements du Systeme Nerveux*, 1889.

<sup>2</sup> *Archiv. f. Anatomie*, 1896, p. 191.

<sup>3</sup> Studies bearing upon this question will be found in Vignal's *Développement des éléments du System nerveux cérébro-spinal*, Paris, 1889; Krohn, *Jour. Mental and Nervous Diseases*, 1892; Donaldson, *Growth of the Brain*, pp. 237-240, gives a resumé together with a cut reproduced from Vignal showing comparative sections of cortex from foetus, child at birth and adult.

<sup>4</sup> *Jour. Phys.*, Vol. XVII, p. 130.

<sup>5</sup> *Growth of Brain*, p. 314.

year. Exner, in 1881, and Tuczek later, made some study of the problem, and Fuchs found from 33 brains, confining himself to a single area in the posterior central gyrus, that in the outer layer of the cortex some tangential fibres appeared as early as the fifth foetal month, and later in the lower layers. He thought the fibres reached their maximal number and size in the seventh or eighth year. Obersteiner much later reaches the same conclusion. In 1892 Dr. Oscar Vulpius,<sup>1</sup> of Heidelberg, made a more thorough and careful study from 22 brains distributed in age as follows: 32d foetal week, 34th foetal week, birth, 4½ months, 8 months, 11 months, 16 months, and 1¾, 2¾, 3, 7, 10, 16, 17, 33, 79 years. He cut homologous sections from the first frontal gyrus (left), third frontal gyrus (left), third frontal gyrus (right), anterior central gyrus (right), occipital lobe (right), and first temporal gyrus (left). After preparing and staining sections, he counted the tangential fibres in an area of a given size as they occurred in three layers of the cortex. The more important conclusions reached by Dr. Vulpius are that the tangential fibres begin in the outer and inner layer about the fifth month, and in the middle layer about the ninth month, that this growth does not cease in childhood, and that as late as the 17th year the increase of tangential fibres is marked; in old age an apparent decrease in number takes place; the greatest number of tangential fibres is to be found in the central motor region; poor nutrition seems to inhibit the growth of tangential fibres. Some of his results, as shown by charts, might be stated as follows: the inner layer in all localities and practically all ages has far the most tangential fibres and the middle layer the least; the relative number of fibres in each layer varies widely in each area, those of the central or motor region having the greatest number; the fibres of the inner layer develop their sheaths in all cases earlier, and in the motor sight and hearing regions, almost reach their maximum in number during the second year, while in the speech and other centers, there is a gradual increase until the eleventh year and a later gradual increment until the 33d year at least; the outer layer fibres follow in general the course of growth of the inner layer, but contain generally from one-eighth to one-half as many; the middle layer in no case makes an appreciable increase until puberty, grows most rapidly in the early adult years, and never contains more than a third as many fibres as the inner layer.

Kaes, in 1893, by a comparative examination somewhat similar to that of Vulpius, shows so conclusively that the development of fibres in the cortex, especially the tangential, is a

<sup>1</sup>Archiv. f. Psychiat. u. Nervenkrank, Vol. XXIII, 1892.

process still in active progress as late as the 39th year, that Edinger, who in earlier editions of his "Nervose Central Organ" denied the demonstration of this, admits in his latest edition (1896) that the principle has been established. In a later study, Kaes comes to the conclusion that at 40 years of age there is at least a partial arrest in the rapidity of growth of these fibres. The small number of brains compared, however, makes this statement of little value.

Dr. Hamarberg, unfortunately cut short by death in the midst of a most promising comparative study of normal and idiot brains, nevertheless made a definite contribution.<sup>1</sup> He compared homologous sections from the brains of nine persons ranging in degree with similar sections from normal brains, comparing the size, number and characteristics of the cells. In all cases the brains of defectives showed marked deficiencies. The developed cells were far fewer in number and of irregular and retarded development. His study leads to the conclusion that the idiot brain is one which has suffered arrest of development in some particular, involving larger or smaller areas of the brain, at some early period.

The more recent studies by Kaes upon fibre development entirely corroborate this conclusion of Hamarberg. In a recent contribution<sup>2</sup> he states conclusions from a detailed comparison he has made upon three brains; that of those of normal child 15 months old, a microcephalous idiot of 18 months, and a macrocephalic dwarf 25 years of age. The dwarf was the size of a child of about nine years of age, unable to speak or to understand language, and hampered by dragging movements of the limbs. Dr. Kaes measured the thickness of different layers of the cortex in several corresponding parts of these brains and gives interesting tabular results. He concludes that in development of the cortex the dwarf of twenty-five years of age has not advanced beyond that of the normal child of 15 months. The projection fibres of the central convolutions are better developed in the normal infant than in the dwarf, while the associational fibres which connect convolutions, marked in the normal infant, are absent in the dwarf. A feature that is common to both idiot brains is the manifest arrest by development of the second and third (Meynert) layers, and Dr. Kaes, from this and previous observations which he has made, feels justified in asserting that the development of this cortical region is essential to psychic unfoldment. A singular anomaly however is, that the external

<sup>1</sup> Studien über Klinik u. Pathologie der Idiotie nebst Untersuchungen über den Normalen Bau der Hirnrinde, 1890.

<sup>2</sup> Ueber den Markfasergehalt der Hirnrinde bei Pathologischen Gehirn. Deutsch W'chschr., Nos. 10 and 11, 1898.

tangential layer is broader and better developed in the idiots, than even in adult normal brains. He offers as a possible explanation the biologic fact that in the lower animal series this layer is larger, comparatively, than in the higher animals, and that in man it frequently appears only in rudimentary form. This external layer develops as low down the scale as reptiles, even prior to the projection system, and Dr. Kaes holds the opinion that we must consider it the precursor or oldest form, on the sensory side, of the projection system. Applied as an explanation of the anomaly described, Dr. Kaes takes the view that these idiots are arrested in development at an early biologic stage and the relatively large amount of tangential fibres represents persistence of an old type. Further he finds that the microcephalous infant had suffered a complete arrest of the development of the fibres of the central convolutions while those fibres most directly in connection with smell were retarded the least, which is significant in view of Edinger's evidence that the apparatus of smell is the oldest of cortical structures, appearing even in reptiles.

This theory of origin regarding the outer tangential layer, put forth by Kaes, agrees neatly with that of the school of Ramon y Cajal which has contended that sensory impulses are received in cortical cells by way of the dendritic processes extending upward to this layer.

Speculatively regarding the two theories, we might say that the external layer is the older path but that in more highly evolved forms some new avenue of approach has been established; that idiots tend to revert to this more ancient path which functions only a low order of psychosis.

While this class of studies, dealing with the growth of the finer microscopical nervous structures in later life, is not as numerous represented as could be desired, yet the results seem sufficient to establish the fact that the finer nervous structures continue to grow until a late period of life; and further, that there is some definite order in their progressive development. These conclusions, when worked out in more accurate detail, will serve to banish many of the fatalistic inferences which psychologists have been prone to conclude from neurology, and to extend the limits and importance of education.

*The Order of Functional Maturity.* The conclusion has now passed into general acceptance that when a nerve fibre acquires its fatty sheath, or becomes medullated as is said, it is then functionally mature. No nervous function is ascribed to the sheath. It serves the same purpose, it is believed, that rubber covering serves for electric wires—it prevents wasteful radiation of the nerve current.

The significance of medullation, once established, becomes a key of great value in determining the order in which the various parts of the nervous system develop. Studies in this direction have been pursued most notably by Professor Flechsig, the psychiatrist of Leipzig. His investigation upon the order of development in the parts of the spinal chord was published as early as 1876 and a continuation of this line of investigation in the brain has appeared in very recent monographs.<sup>1</sup> The spinal chord consists of a core of gray matter surrounded by vertical bundles of nerve fibres. These various bundles connect different portions of the nervous system.

Flechsig found that the class of nerve fibres first to take on their medullary sheaths are those connecting neighboring centers in the cord, and those concerned in receiving and discharging simple reflex reactions. This medullation process begins in the latter half of the fifth foetal month. Then follows the medullation of the short columns connecting different levels of the cord, and presumably, therefore, concerned in local reactions of the cord itself. The columns of Burdach follow, and still later that of Goll, which conveys the sensory impulses, received chiefly from the periphery, upward to nuclei in the medulla and are thence transmitted to the cortex; still later the cerebellar columns conveying impressions to the cerebellum, having to do with equilibration, are developed. The pyramidal columns which discharge voluntary impulses from the cortex of the brain downwards do not mature in the cord until about the time of birth and later. This order of development of the spinal columns is of important significance to the problem in hand, for it shows that the order in which the different strands of the spinal cord reach maturity is the order of racial unfoldment. The simple reflex mechanism is the earliest in biologic development of the nervous system, and, as shown, is the first to mature in the development of the individual. Voluntary movements regulated by the cortex are the most recent in racial development, and, the pyramidal tracts which convey these impulses, are the last of the spinal columns to reach maturity. We have here, therefore, the illustration of the principle that in the development of human nervous functions, the first mechanisms to mature are those which are fundamental and racially the oldest, and that the order of development proceeds from these to those which are of more recent evolution.

The spinal cord of the human infant at birth, Flechsig finds, is completely medullated with the exception of the pyramidal (motor) columns. Medullation extends to some extent in the

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<sup>1</sup> Gehirn und Seele, 1896: Die Localization der Geistigen. Voränge insbesondere den Sinnesempfindungen, 1896.

medulla oblongata and in the pons, but the entire cerebral hemispheres are yet immature with the exception of a few traces in the internal and external capsules and in the lenticular nucleus. The new-born human infant is therefore a creature not unlike Goltz's dog whose cerebral hemispheres were extirpated. This dog, it will be remembered could react, by means of his spinal mechanisms, to external excitations of pressure, light, sound, etc., but was utterly incapable of originating movements or of profiting by memory.

Flechsigs's most recent studies have attempted by the same neurological method, to trace the order of development of the various bundles of fibres in the brain proper. In the monograph *Die Localization der Geistigen Vorgänge insbesondere der Sinnesempfindungen* (1896), he gives the results of his researches upon the sheaf of sensory fibres which, originating (indirectly) in the spinal cord, conveys impressions through the internal capsule to the cortex. He finds that it is composed of three separate bundles, each maturing at a different period. The first bundle begins to mature just before birth. The largest portion of its fibres go directly upward and distribute themselves over the two central convolutions. This is a fact of extremely important significance in substantiation of the evolutionary principle. Of all localization of the brain, that of these convolutions is most clearly established in detail. They represent the older fundamental parts of the organism — kinæsthetic and tactual sensation of the arms, legs, trunk and of bodily feeling generally. The region they enter is the one which, on the motor side, controls the most essential and chief movements of the body, as the electrical experiments of Ferrier, Horsley and others upon monkeys have demonstrated. A small branch of this first system disappears in the direction of the occipital (visual) area, but Flechsigs is unable to assert positively that this branch contains optic fibres. In the first month after birth a second bundle of this sensory sheaf, appearing in the inner capsule from the lower levels, matures in the direction of the cortex. A large part of these fibres find their destination in the same areas as those of the first, while another part turns inward and distribute themselves along nearly the whole length of the gyrus fornicatus on the mesial side. According to Ireland,<sup>1</sup> resting his conclusion on the experiments of Ferrier, Horsley, and Schäfer, this region represents sensations of touch and temperature, but its exact function is yet doubtful. The third of these sensory bundles does not mature until a very much later period, varying from one to several months after birth. One part goes directly to the foot of the

<sup>1</sup>Journal of M. S., Jan., 1898.

third frontal convolution (the Broca center for speech). Other smaller bundles are distributed to the first and second and third convolutions and also to the gyrus fornicatus. The most significant feature is that Broca's speech convolution begins development at a very much later period than other parts of the great areas concerned in general bodily movements. The order of development of the fibres in their approach to the cortex through the internal capsule is regulated by the same principle, we therefore see, as those in the spinal cord — those which perform the oldest and most general functions mature earliest.

The first of the special sense centers in the cortex to mature, according to Flechsig, is that of smell, which, according to Endinger's studies, is the first sense center to be evolved in the biologic scale, appearing as low as reptiles; the last to mature is that of hearing. The process of medullation of the fibres leading to and from the sense centers takes place rapidly, and by the end of the first month of human life, all of them show some evidences of maturity.

Up to this point Flechsig's anatomical contributions are accepted generally and much that he has put forth on these lines has been corroborated by other neurologists. But in the matter of the fibre connections of the cortex with lower nervous centers, he offers a revolutionizing contention in brain localization and his claim is now under the fire of criticism and dispute. Heretofore it has been the accepted theory that the entire cortical area sent or received fibres to and from the lower centers. Flechsig, from his examination of infants' brains, declares this is not true. Only about one-third of the cortical area at the end of the first month shows these descending or ascending fibres. Then medullation begins to appear in the other areas, in the frontal portion, in the large posterior parietal area and in the Island of Reil, covering in all two-thirds of the human cortex. But contrary to expectation, based upon the supposition of previous methods of determination, these medullated fibres do not come nor go from the lower brain centers. They give no evidence of a peripheral source or destination. They do not follow the course of the fibres developed in the first month of life. On the contrary, Flechsig contends, the source and destination of medullated fibres of these larger cortical areas are in the sense centers previously developed — those of sight, hearing, touch, smell and taste. Since they are of different anatomical connection and direction, the conclusion is necessary that they must have a different function. Flechsig leaves his anatomy at this point to offer the plausible speculation that these large centers have for their function the association, and the superior directive power of inhibitive interference upon the areas of sense impressions. "Only one-third of

the human cortex," he concludes with some pardonable eloquence, "stands in direct relation with the processes which bring sense impressions to consciousness and excite the muscles and mechanism of movement; two-thirds have directly with these nothing whatever to do. They have another, a higher function" — the function of knowledge, of interpreting experience, of the æsthetic sentiments, of the scientific decisions, of the moral judgments, etc. Through disease of these highest association areas, if we may follow Flechsig in some daring speculation, the individual is thrown back for the determination of his conduct upon the sense or lower centers. Such, he suggests, is the effect of alcoholic intoxication, and other more permanent forms of mania. It is undisputed that in idiots and imbeciles, Flechsig's areas of association are notably small. Flechsig goes further and claims upon anatomical evidence that in monkeys instead of two-thirds of the cortex being devoted to these associations, there is but one-half; among carnivora, these centers are very small and decrease as we descend the scale of mammals, disappearing entirely in rodents. It might be well, since Flechsig's conclusions are now being tested by criticism, to draw a line between his anatomical contributions and his speculations. Unquestionably he has conclusively shown that certain bundles of fibres, representing certain more or less specific movements, mature at distinctly different periods. Regarding his association centers, it must be admitted that Flechsig has here contributed positive data of anatomical observation that the sense centers are indirectly associated in a common area. As positive data, it cannot be contradicted by theory or mere argument — we must wait for positive data of contradiction.

Dr. Ross in his *Diseases of the Nervous System* was perhaps the first to attempt a distinction in the nervous system between structures which in function antedate the human form of the organism and those which have been added during the period of human evolution. He says: "The portions of the nervous system which man possesses in common with lower animals and which are well developed in the human embryo of nine months, I shall call the *fundamental* part, and the portions which have been superadded in the course of evolution, which differentiate the nervous system of man from that of the highest of the lower animals, and which are either absent in the human embryo or exist only in an embryonic condition, I shall call the *accessory* part of the nervous system." Dr. Ross points out that the main movements which distinguish man from the lower animals are those which he has acquired since he adopted the erect posture—the varied movements of the hand in prehension and tool-using which developed after the



hand ceased to be merely a foot; the movements of articulatory organs concerned in speech, and movements of facial expression. Dr. Ross, by this suggestive juxtaposition of fundamental and accessory physical parts in the human organism, with the fundamental and accessory mental powers of man, has opened a field of inquiry rich in suggestion for psychology and education. Are these accessory movements of the hand and the articulatory organs, in some intimate connection with that mentality of man considered as accessory developments to those of the lower primates? Have these accessory elements, by virtue of their comparative newness, more instability and plasticity, and are they therefore more subject to education? Lastly, and most important in the development of the individual, is the order the same as that of the race, so that from infancy to manhood we have a procession of developing parts beginning with the oldest and most fundamental and ending with the newer and accessory? Granting, for example, that the physical development follows this order, does mentality as well? If so, and if we can follow this order of development in some detail, we should have a principle that long has been needed for clearer visualized thinking in psychological and educational science.

We must not neglect in this very brief consideration the very probable theory, happily named by Baldwin<sup>1</sup> the "short-cut" theory, by which development in individual man, by ages of modification, cuts across lots, thus escaping many needless bends and turns in the road evolution has actually travelled. Unless we accept this modification it would be impossible to explain many anomalies; for example, the fact which Gratiolet has pointed out that, while in the embryonic development of the ape, the temporo sphenoidal convolutions (embracing the human auditory center) appears first and the frontal convolutions last, in man the order is reversed.

Man does not complete his fundamental development at birth. If we are to accept Flechsig's association areas as the centers of human reason, we find these parts, anatomically, far down the vertebrate scale. From an objective study of human activity as illustrated by movements, the suggestion would be that these accessory structures are delicate modifications of existing structures.—new duties added to old forces. Ross thinks we have indirect evidence of these accessory formations in the huge development of the prefrontal lobes, which have pushed the posterior parts of the brain over the cerebellum, made the Rolandic fissure seem further back, relatively, and forced the posterior limb of the Sylvian fissure into a more horizontal position.

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<sup>1</sup> Mental Development in the Child and Race, p. 21.

Flechsig's contributions of data go far to enrich and substantiate the theory of Ross by showing an evolution in the order claimed. But Flechsig's facts deal wholly with infancy and must be taken merely as the beginning processes of development.

From the evidences of late growth of fibres shown by Kaes and Vulpus, and of cell bodies by Hamarberg, there is justice in assuming that these processes continue until late in life under regulation by the principle which requires the more general and fundamental structures to develop before the accessory. If this indeed be true, then it is clear that the historic pedagogical contention, stated in the preface, that the order of instruction should be regulated by the order of internal development of the mind, rather than by the logical order of the subject-matter studied, rests upon a substantial basis.

*The Level Theory of the Nervous System.* The conception of the nervous system as an undifferentiated unity, such as pervades the popular notion of mind, is not a view that finds substantiation by modern investigation. The notion that all our actions are dictated from a single center, the brain, is at best but half a truth; many actions which have every appearance of good sense are regulated entirely within the spinal column; and some from within the walls of the abdomen. The lower orders of animals have no brain ganglia, and the lowest vertebrates no cerebrum. Man epitomizes the products of biologic history, and from an evolutionary standpoint we should expect a nervous system of added parts instead of a homogeneous organ. All positive evidences from the sciences of anatomy and physiology, and pathological phenomena as well, go to support the evolutionary view of the nervous system of parts, correlated and closely associated, but nevertheless preserving a degree of relative independence. ~~~

It was some thirty years ago that Dr. Hughlings Jackson, the eminent English pathologist, made practical application of the evolutionary theory of the nervous system to the diagnosis and treatment of epilepsies and mental diseases. Such has been the practical success of this application, that the so-called Hughlings-Jackson three-level theory is now the established basis of English diagnosis, and, in the words of a reviewer,<sup>1</sup> it has established system where previously all was chaos.

Jackson conceived the nervous mechanism as composed of three systems arranged in the form of a hierarchy, one upon the other, the higher embracing the lower yet each preserving

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<sup>1</sup> Dr. James Anderson in Hack Tuke's Dictionary of Psychological Medicine.

for itself some degree of exclusive independence. The lowest level is composed of those cell structures which receive impulses without physiological break, from the periphery or non-nervous tissues and those which discharge impulses into such tissues to produce movement. This has also been called the reflex level for it represents the type of simplest reflex and involuntary movement. Jackson localized these structures in the grey matter of the spinal chord, medulla and pons. His second, or middle level, comprises those structures which receive sensory impulses, not from the periphery nor from the non-nervous tissue directly, but from cells of the lowest level; the motor cells of the middle level discharge, not into non-nervous tissue directly, but into the motor mechanisms of the lowest level. If we say that the lowest level "presents" impulses, then, in Jacksonian phraseology, the middle level "represents" them. Anatomically, Jackson included in the range of these middle level structures the cortex of the central convolutions, the basal ganglia and the centers of the special senses in the cortex. Evidence for such a level lies in the fact, now proven by the process of secondary degeneration of nerve fibres, that there are no fibres extending continuously from the periphery or musculature to the cortex nor in the reverse direction. In all cases they extend as continuous fibres only to the vicinity of cells of the reflex level in the cord, medulla and pons, as Jackson held. Jackson's highest level, as the topmost layer of the hierarchy, bears the same relation to the middle level centers as the middle to those of the lowest level. He presumes upon no continuous connection between highest and lowest level—the middle level structures mediates between them as a system of relays. The highest level, therefore, "*re-represents*" the external world through the double mediation of the middle and lowest levels. Jackson had no anatomical evidence in positive proof of the actual existence of highest level structures. His ground for it was physiological and a conclusion necessary from practical diagnoses of epilepsies. He localized it by accepting Broadbent's hypothesis. Now it strangely so happens that Broadbent's<sup>1</sup> hypothesis forestalls, both in its localizations and assumed functions, Flechsig's "association centers." In function and localization, therefore, Jackson's highest level and Flechsig's alleged association centers are practically identical.

According to this hierarchal arrangement of the nervous system the lowest level, as the simplest, oldest, most fixed and non-plastic, contains mechanisms for the simple fundamental movements in reflexes and involuntary reactions. The middle

<sup>1</sup> For original article see *Med. Chir. Trans.*, 1872, p. 178-9; Jackson's acceptance, *Brain*, 1879.

level regroups these simple movements by combinations and associations of cortical structures in wider, more complex mechanisms, producing a higher class of movements. The highest level unifies the whole nervous system, and, according to Jackson, is the anatomical basis of mind. "The highest level centers," says he, "are nothing else than the centers of universal and complex representation, or what is the same thing, universal and complete co-ordinations, or, using old-fashioned language, they are the whole organism."

Jackson's theory is thoroughly evolutionary in its essential conceptions. "What are the lowest levels," says Jackson, "are centers for the simplest movements of the limbs, which become evolved, in the highest centers, into the physical basis of volition. What in the lowest levels are centers for simple reflex action of the eyes and hands are evolved in the highest level, with the physical basis of tactual ideas. What are the lowest centers for movements of the tongue, palate, lips, etc., as employed in eating, swallowing, etc., are, in the highest centers, evolved into the physical basis of words, as symbols serving abstract reasoning, what are the lowest centers for circulatory, respiratory and digestive movements, in the highest centers, are the physical basis of the emotions. So to speak, the lowest level does menial work; the highest level, evolved out of it, becomes in great degree independent of it and is the anatomical basis of mind."

The three-level theory grew chiefly out of the need of a practical working hypothesis in the diagnosis of mental diseases, and as such it has proved serviceable in pathological practice. In epilepsies, due to affections of the lowest level, there are spasms of the reflex movements without necessarily involving higher and more complex co-ordinations, as, for example, respiratory fits. The middle level epilepsies are of a more complex order, originating in some point of the extreme periphery and extending in directions that are found to agree with adjacency of centers for these movements in the cortex; loss of consciousness is frequently a subsequent, but not necessary accompaniment. Jackson localized the seat of middle level epilepsies in the Rolandic convolutions, and so accurate was this conjecture, that in the light of subsequent studies in brain localization, trephining of the skull and removal of the diseased portions of the brain has become a successful mode of treatment. In 1895 Starr<sup>1</sup> reports 350 cases of trephining with a large percentage of successful results. Laurient earlier reports upon 102 cases of trephining for middle level epilepsy as follows: cured, 54; improved, 20; not improved, 17; made worse, 2; died, 7.

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<sup>1</sup> Brain Surgery.

Very different, however, are the forms of *grand mal* and *petit mal* epilepsy which Jackson diagnosed as affections of the highest level. There is a spasm, not in a single part of the body, but of the whole, and consciousness is lost at the outset.

*Pedagogical Application of the Level Theory.* Pathological practice in the diseases of dissolution, or "devolution," of the nervous system now accepts the essential conception of the Jacksonian theory as a successful working hypothesis, recognizing, however, that it is a general scheme rather than a detailed plan of proven facts accurate in detail. Its applications have, however, never yet been made to psychology and pedagogy. Education deals with the normal evolution of the nervous system. It therefore in a sense takes a complementary view to that of nervous pathology. May it not be that the introduction of the Jacksonian view of the nervous system may prove as serviceable to education as a working hypothesis, as it has in pathology? In crude outline we must recognize in this hierarchical scheme of the nervous system, the analogy of its phylogenetic development. In the lower invertebrates, we find, not a centralized nervous system with a cerebral or even spinal central stations, but a loose system of local ganglia regulating, in more or less independent manner, special movements of the animal. In higher orders chain ganglia appear with a growing approach to centralization. In vertebrates we find the chain system transformed into the spinal system and within the cranium are ganglia of the special sense organs, developing in complexity and centralization as we go up the scale. Flechsig's highest association centers, presiding over higher reason, if we accept them, extend as a tapering tongue far down the mammalian scale. The human nervous system, therefore, from this view point is the jointed product of evolutionary increments. It sums all stages of its historic evolution. Within it are preserved the primitive forms of nervous control as well as the last products of evolution. The reflex level finds its analogy in the lowest forms of life; the cerebro-spinal system represents a later addition; the highest level is essentially a human accession. The progress of development upward through the levels is a progress from simplicity to complexity, from that which is oldest racially to that which is newest, from that which is fixed and unyielding to the environment, to that which is plastic and yielding to environmental changes. Is it possible that in mental and physical growth from the human infant to maturity we may trace, with practical suggestion and profit to education, the phylogenetic joints of his historic evolution?

From the order of development in maturity of the fibre bundles of the spinal cord and brain, it is conclusive that each bundle has its special period of immaturity, of plastic growth,

and finally fixed maturity when modification is difficult or impossible. This middle nascent period is the period for education. "We know," says Clouston, "that each center has its own nascent or growth period, which is sometimes very short, as it must be in the center in which movements of sucking are co-ordinated; and sometimes very long as in those in which we co-ordinate the movements of the hand, from its first feeble grasp up to its consummate achievements in making and shaping."

On the side of external movement we see corresponding phenomena in development. The cord reflexes appear and perfect themselves, largely in early infancy, it is true, but nevertheless they continue to develop until a comparatively late period. Certain reflex movements of the eye, opening or closing upon stimuli of light, moving upward and downward, one side to the other, are mature in the early hours of life; but the capability of a specific object in the field of vision to control and direct these movements, is not manifest generally for several weeks, and an act of volitional control which we may regard as an interference of the highest center does not appear for several months. The infant can grasp with its fingers in the first hours of life, but it is several months before it uses the thumb in its grasping movement. Many of the most delicate movements, accomplished by nicest adjustments of the highest centers, do not appear until very late in childhood. On the other hand, many of the eye adjustments pass to the control of the higher centers, undoubtedly, in infancy. Therefore we must carefully avoid the notion of the maturity of all the nervous processes occurring at a specific time or period. We must on the contrary conceive the process as one occurring separately in many thousands of activities depending upon as many neural developments, each pursuing its progress from birth to senescence, reaching different levels of activity at different times and at different rates of progress. However, with the clear recognition of this principle, and the manifest incorrectness of the conception that would lead us to say in an absolute sense, that the reflex level, as a whole, matures at a certain period and then rests; that the cortical sense-centers, as a whole, next mature, and finally that the highest level matures; still facts may warrant us in concluding that certain general periods may be characterized by predominance of nascencies in a given level. Thus it certainly may be said that in infancy the nascencies of the lower level outnumber those of the middle and higher, that in childhood up to puberty the sense-center nascencies predominate, though lower level processes continue to appear and a fair number of highest level nascencies occur; and that finally in the adolescent period highest level growths predominate.

There are many facts which go to support this tripartite progress of nascencies, in a loose sense. Insanity, for example, is rare in children under fifteen years, and Mercier explains this fact on the ground that children under the pubertal age do not yet possess mature higher centers. Insanity under modern interpretation is an affection of the centers of the highest level. Disregarding senescence, it has been found that the greater number of insanities occur in the later ages of maturity,—in men from 40 to 60, and in women from 30 to 50. However, Mercier is only loosely correct in saying that insanity does not occur until after puberty, and the exception confirms the principle put forth that the highest center is slowly maturing in some fields of activity from infancy through childhood. It is not so frequent, probably because there are fewer parts matured, and perhaps these, since they are the earliest found, are the oldest phylogenetically, and hence more resistant than many later formations. According to Boutteville, the proportion of insane children to insane adults is as follows: From 5 to 9 years, 0.9 per cent.; 10 to 14, 3.5 per cent.; 15 to 19, 20 per cent. Winslow finds only eight children under ten years of age among 21,333 insane patients. But with the beginning of puberty there is developed a variety of psychic phenomena, which, while only temporary, are none the less to be classified as within the borderland of insanity,—irritability of temper (*i. e.*, lack of inhibitive control by the highest centers), morbid notions ranging into hallucinations, etc. Insanity in children when it occurs, according to Ireland, is generally an after-effect of certain diseases, tubercular meningitis and fevers which, we can readily understand, tear down the tissues of the highest centers. The gradations of epileptic diseases indicate a growth by periods. Epilepsy in all its forms, may perhaps be regarded as a disease of nervous instability. A development upward through the levels has been traced. Certain forms as the respiratory infantile convulsions and other attacks of the lowest level are most common in infancy; Jacksonian epilepsy of the middle levels predominates later in childhood; genuine epilepsy is most frequent later still. Still, all varieties do occur to some extent in the early period, illustrating the probable fact which has been pointed out that all systems commence to grow at an early period. Gowers has shown that out of 1,450 cases of various epilepsies 29 per cent. began in patients under ten years; 46 per cent. between ten and twenty years; 15.7 per cent. between 20 and 30; 6 per cent. between 30 and 40; and 2 per cent. to 1.5 per cent. after 40.

As a frank speculation, may we not ask whether it is not plausible, in a loose sense, that the period of predominating culmi-

nation and extreme nascency of the highest level, unfolds at a time beginning roughly with puberty and lasting throughout the earlier years of adolescence : whether the period of culminating nascency of the middle-level system does not begin about the second year of life and gradually mature throughout the early ages of childhood, reaching a period of ripened but slow growth in the three years just preceding puberty : whether the reflex system is not most active in earliest infancy, and as we see in the gradual maturity of reflexes reach its maturity about the second year ?

In an unconscious but nevertheless clearly established way, these three periods have for practical purposes always been distinctly insisted upon by the popular mind. Infancy has been recognized as a period for learning to creep, to walk, to maintain the equilibrium and to use hand, arms, and legs in the countless movements that later become reflex. Childhood, by ancient and familiar dogma, is the period for training the sense-centers. No period, however, has been so clearly recognized as that of the nascency of the highest system in adolescence. It is a common statement that it is not till a child is thirteen or fourteen years of age, the pubertal period, that he is capable of rational thought and reason. The school has always insisted upon this, giving memory topics in the earlier years and reserving the rational study, requiring higher correlation for the later period. In all religions, civilized and savage, there are religious rites, perhaps dependent in origin on sexual changes, but, nevertheless, changes which are clearly conceived as psychic as well, recognizing that the child takes on at this time the adult's logical thought. The confirmation services in our established churches are evidences about us, and in evangelical churches there is a prejudice against accepting a religious judgment until after the child is thirteen or fourteen years. On the other hand, this is the period the child himself chooses to make them. Rousseau clearly expresses a wide-spread sentiment, when he asserts, that until twelve years the child should grow practically wild, and Aristotle in his ideal state would begin the first really psychic judgments, based on higher association, at fourteen.

May we indeed not go still further, and, upon a basis of ontogenetic and phylogenetic parallelism, speculatively raise the question whether or not these nascencies in the reflex, middle, and highest levels do not carry with them specific biological characteristics ; whether it is not true that in infancy we do find evidences of the rudimentary instinct of spinal life in a biologic sense ; whether in childhood, the instincts that have been most closely associated with middle-level activity in an evolutionary sense do not now predomi-



nantly appear ; and finally whether we may not find in adolescence the appearance of certain higher atavistic associates of the highest level, more characteristic of man's higher and later development. At least in a crude general way is it not probable the methods of learning new things, of thinking and reaching conclusions in action and even in thought do not pass through these three stages of growth, so that tendencies, interests, and instincts developed by a lower system built by a subsequent growth of fibres from the highest system tend to be replaced by higher level forms in a natural way? It is more than a merely plausible hypothesis that if the structure governing a given nervous reaction in an activity is carried forward by evolution from a lower to a higher organism, the reaction itself of this transmitted structure must also tend to be reproduced, preserving amid accessory human types of reasoning the vestigial tendencies of earlier racial habits. And it is more than merely plausible, from all we now know of the structure and processes of the nervous system, that the accessory or highest human types of action and thought only reach this highest stage by passing through, in infancy and childhood, the lower level types of this process. We must not place emphasis upon the number of levels which the Jacksonian theory has employed, for that has been a rather arbitrary assumption. There may be many levels. The central conception is that the higher processes are formed by combination of elements and structures of a lower process already existing. Children frequently persist in following some strange, useless or even savage interests quite foreign to our civilization. Upon this doctrine of development by levels, these strange and useless experiences nevertheless may be essential as a platform, out of which a higher co-ordination, useful for modern life, may be reached. The intermediate stage or level may be useless or even inimical to our civilization, but yet as a link in evolution, be none the less essential.

A system of education following the order of developing nascencies in the parts of the brain would, in all probability, find itself in opposition to many of the methods of the present curriculum of the primary school. At least the present practical pedagogy is based largely upon the logical cleavage of the subject studied, and has given little or no attention to the order of development by nascency. If the abstract reasoning is largely a process of association of centers of the highest level, and if, as facts seem to point, the highest level does not reach its stage of predominating nascency until the adolescent period, then the so-called reasoning process, as it appears in adult life and in childhood, cannot reasonably be presumed to be identical in essential character. The reasoning of the adult

must involve a large area of centers, and a more intricate concatenation. Yet school practice, relying partly upon notions of metaphysical rationalism and folk-thought has naively assumed that the process by which children and adults reach conclusions are identical.

#### FROM FUNDAMENTAL TO ACCESSORY IN MOVEMENT.

Muscular movement is the complement of nervous activity. If there has been an evolution from fundamental to accessory forms of structure in the nervous system we must expect to find a similar evolution in the character of movements. Facts answer fully these requirements of theory. The movements which are regulated predominantly by the accessory structures of the nervous system show certain characteristics distinctly differing from those regulated by the fundamental parts of the nervous system. An illustration of accessory movements in the sense of those which are not possessed by animals lower than man is offered by the complex capabilities of the human hand. To bring out the characteristics of the accessory hand movements as distinguished from the fundamental movements, we may compare them either with fundamental movements of the human body, *e. g.*, the trunk movements, and with fore-limb movements of lower animals. The first comparison has been carefully made by Dr. Mercier, though with no attention to evolutionary significance, in his distinction between "central" and "peripheral" movements. By central movements he means those made by the trunk and more central portions of the body<sup>1</sup>, and by "peripheral" he means the movements made by the hand, articulatory muscles, etc. But the terms in the comparison chosen, practically coincide with "fundamental" and "accessory" respectively, since the trunk movements are those which man has in common with lower animals and a large class of hand movements have been added in human experience, though another class are clearly fundamental. Dr. Mercier points out in the first place (1) that the trunk movements are few and resemble one another in kind, while the peripheral movements are countless in variety and number. The movements of the trunk are limited chiefly to leanings, some slight ability to rotate, and to the respiratory function. "With each step that we take towards the periphery, the number of movements that can be executed and the amount of difference between these movements increases, until at length when the periphery is reached, the number and variety of movements becomes enormous. The area over which the hand can be moved is almost as large as that of a sphere whose radius is the length of the arm, and the hand can reach three-fourths of the points between the shoul-

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<sup>1</sup>The Nervous System and Mind.

der and the area thus marked out." In order to realize the innumerable positions members of the extreme periphery may take, we have but to note a pianist's hands and fingers in movement. (2) The most significant distinction to which Dr. Mercier draws attention is that in the association of two or more movements, the distinctive tendency of central muscles is to make them simultaneous or alternating, while the accessory muscles are distinctively capable of long and complex sequences. The legs in walking alternate and there is even bilateral tendency in using the whole area for the other arm to move simultaneously. Compare with these the power of the hand in writing, or the articulatory muscles in speech to maintain long series of movements in accurate sequence. The first term of the series being stimulated the other terms follow in an accurate order and nicety which is marvellous when we attempt to analyze them. Consider for example the habit of sequence which is developed in the fingers of the pianist. (3) The central movements are crude in any work requiring precision and delicate co-ordination. The central movements enter as associates into these co-ordinations by providing steadiness, but the finer movements are performed by the periphery. (4) The peripheral movements bear to the central the relation of the special to the general. We cannot use our fingers in writing till by the central movements the arm is brought into position and held steadily. We cannot speak without the general movements of breathing which force the air through the larynx. The peripheral movements, aided by their power of acting successively and with greater complexity, perform special feats.

It would be a faulty explanation of these striking differences in the characteristics of central and of peripheral movements to assert that the differences are due a larger number of muscles in the hand<sup>1</sup>. The number of muscles in the entire arm exceed those of the trunk very slightly. The marvellous adaptability of the hand can only be explained on the ground that the higher levels of the nervous system combine the lower level movements into the countless new complexes and introduce the features of sequence, precision, etc., which for the fundamental levels are practically impossible.

Many movements of the hand are of course fundamental, and the theory of superposition in the governing nervous structure is prettily shown by the phenomena of certain nervous diseases. General paralysis that begins in the highest

<sup>1</sup>Quain's Anatomy, p. 186, gives the number of muscles in the body as follows: Head and neck, 75; vertebral column, 51; upper limb, 58; lower limb, 54.

centers is accompanied in slighter attacks with almost imperceptible interference with precision; the patient is not able to execute the finer delicate movements. As the disease spreads downward, these more general, more complex, more precise movements are lost layer by layer as it were, from accessory to fundamental, from peripheral to central, from highest to lowest level, from the products of latest evolution to those of the older. Such devolution may be illustrated in the early loss of writing without appreciable loss of fundamental movements of the hand; by the early loss of speech without loss of eating or swallowing movements of the throat, nor any paralysis of the tongue and lips. In downward progress of disease—in devolution so to speak,—the loss of higher level centers results in loss of peripheral or accessory movements, frequently leaving the fundamental movements quite unimpaired.

It remains briefly to compare the movements of the human hand with the movements of the fore limbs of lower animals for the purpose of noting that these characteristic differences between higher accessory human movements and those of animals are the same that exist between the accessory (peripheral) and fundamental (central) movements in the human body; and secondly, to offer further evidence that the explanation of these differences parallels the differences between the accessory and fundamental levels of the nervous system.

However different the movements of the fore limb of man and brutes, however varied the degree of complexity and the diversity of purpose for which these movements are employed, nevertheless the fundamental structure in all is singularly similar.<sup>1</sup> Place drawings of the skeletons of the human hand and of the fin of a whale side by side and ordinary observers will require the printed names underneath to distinguish them. The muscular framework offers greater differences it is true, but the difference in the arrangement of muscles between a monkey hand and a human hand offers scarcely any proportionate hint of the real differences in their capabilities of movement. There is always a cluster of bones forming an ankle or wrist, and proceeding peripherally from it a series of bones, actual or rudimentary, forming what may be called rays. All originate from the primary purpose of locomotion. M. Bernard suggests the crocodile as a living example of this primary type, by whom the fore as well as the hind limbs are used solely for locomotion, though if we choose to go further

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<sup>1</sup> For an excellent comparison see M. Bernard, *Pop. Sci. Mo.*, Feb., 1898.

back we find the fin of the fish similarly used. Now, in most of these early types, the movements are very few and simple, practically limited to movement forward and backward in a single plane; there is practically no rotatory movement either in the shoulder or other joints, and the digital extremities are not used for grasping except in a very rudimentary way. As we go up the scale of evolutionary differentiation we find new movements and a few new anatomical modifications, but the former are in far larger proportion. Bears develop claws, and with them a clutching movement for climbing trees or holding prey; ungulates, for rapidity of flight; carnivora, for rapidity and strength in pursuit, endurance and holding or tearing prey. But in all these modifications the number of different movements is extremely few; they are without complexity, dominated by the character of simultaneity, making slight use of the principle of succession; they are without relation, and are all executed nearly in the same plane. In the movements of clutching, tearing, etc., there is no independent movement of the digits, but these are merely transformed into a sort of claw, and the real work is done by the more central muscles which draw this hook in one plane, thus useful in tearing, pulling, digging, etc. Moreover, in all animals below the primates, with few exceptions such as birds, rodents, etc., the movements which are not those of locomotion are merely incidental and reach no important degree of complexity. The toes in the great mass of common carnivora and ungulates are used for walking; the joints stiffen and, as in the case of the horse, some atrophy and practically disappear. With the arboreal life of the Simian species, a new environment has worked wonders with the limbs. In life among the branches of trees and the necessity for dexterous and agile movements of the limbs, the monkey family seem, compared with the lower animals, to have made a progress that amounts seemingly to a difference in kind. In point of form of hand and arm movements, though not in perfection, complexity, and in ability to execute series of successive movements, the apes probably are nearer akin to man than to the lower animals.<sup>1</sup> Apes have to some extent the power of bringing the thumb into opposition,<sup>2</sup> but the ape grasp, as some one has said, is adapted for seizing a cylinder, while man's grasp is adapted for seizing a sphere as well. Compared with man,

<sup>1</sup> Broca, *Revue d'Anthropologie*, 1872, p. 26, concludes that anthropomorphous apes approach more nearly the bipedal than the quadrupedal type.

<sup>2</sup> See Turner. Pres. Address before anthropological section of the Brit. Ass'n for Advancement of Science. *Nature*, Sept. 2, 1897. Dr. Hephren, *Jour. Anat. and Phys.*, XXVI.

Broca<sup>1</sup> found that the arc of rotation of the forearm of certain monkeys is not more than 90 degrees, while, according to the same investigator, it reaches 140 in the chimpanzee and 180 degrees in man.

It is unnecessary to multiply examples. It is evident from this brief survey, that progress in evolution of hand movements in the biologic scale has been from extreme fewness in number to infinite variety, from simplicity to complexity, from clumsy inaccuracy to precision, from simultaneous associations to those which constitute long series in sequence, from the general to the specialized. Secondly, it is evident that the slight differences in bony or muscular structure are far inadequate to explain these enormous differences between accessory and fundamental. The jaws, teeth, tongue and palate of lower vertebrates are not so radically distinguishable from those of men to account for the rapidity, complexity, marvellous precision, accurate co-ordination and successiveness involved in human speech. Yet a civilized man uses a score of thousand words or more, each requiring a special and appropriate set of movements, different from all others; and moreover he throws these together in sentences requiring successive co-ordinations of long sequences with marvellous precision and rapidity. When we attempt to measure the gap between man and the lower animals in terms of power of movement, the wonder is no less great than when we use terms of mentality. We are forced back again for an explanation of this marvellous complexity of adjustment to the nervous system, and to conclude that the difference in associational capability between the accessory and fundamental levels must indeed be significant. A chapter essential for the completeness in the educational application of the principle which has been thus treated, would attempt to show at this point that the individual from infancy to maturity passes through stages of movement from those which possess the fundamental characteristics to those which are accessory. This discussion, however, must be reserved for a subsequent place.

*Relation of Accessory Hand Movements to Human Intelligence.* In previous sections the evolution of the nervous system and the evolution of movement have been traced separately. The present section will deal with data suggestive of the intimate correlation, in the progressive evolutionary stages of the nervous centers employed in psychical activity and of those concerned in muscular movement. The data in the evolution of the human hand will chiefly be used as the material for illustration.

The intimate relationships existing between higher intelligence and the more highly developed accessory motility of the

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<sup>1</sup> Bull: Soc. Anthropol., 1869, p. 301.

human hand has been so striking that it has been noted even so far back as Anaxagoras. The extreme theory has been put forth by many modern writers that human intelligence, as such, has arisen in direct consequence of man's assuming the upright position. The fore limbs, thus relieved of the duties of locomotion which in lower animals is more or less their exclusive function, have found vent for their energy in manifold new employments, and thus introduced the human race to varied world of richer experiences. Intelligence has been the product.

Trace the evolution of the higher human intelligence as we will,—from toolmaking and tool-using to modern invention, from manual signmaking to speech, from hut building to architecture, from picture-writing to painting, from bizarre fashioning of fetiches to sculpture, from rude drumming to higher instrumental music—the development of hand and mentality have ever been in the closest intimacy of association. Under the simple psychological law that processes occurring simultaneously tend to fuse, we have reason to expect, in advance of evidence, that the accessory hand movements and accessory mental powers of man should be singularly related.

There is much in psychology that supports the general theory. Dr. Stricker in his *Bewegungsvorstellungen* contends that in every mental act of the imagination there is a tendency to muscular movement which in many persons rises above the threshold of consciousness. In his own case, when he imagines a man walking he feels simultaneously a tendency in his thigh to move his own leg. When he succeeds in suppressing these muscular tendencies he finds himself unable to imagine. This phenomenon is in accord with modern psychological views. In order to raise the arm, for example, the motor mechanism is set off by the sensory centers which hold in memory the impressions that were received from the joints, muscles, etc., when on previous occasions the arm was lifted; these sensory impulses arising from the movement of some portion of the body have been termed "kinaesthetic" sensations. Consequently when Dr. Stricker imagines a man walking, these kinaesthetic memories are reawakened, and, perhaps, form essential elements in the imagination of the general act of walking as performed by another person.

Darwin, Duchenne, Pidirit and Mantegazza have studied the significance of the expressive movements, especially of the face and hands, and in general conclude that these are weakened forms of movements that were once directed to some practical end; that is, the kinaesthetic sensations that once set off a purposive action, now reappear by force of association with specific traces of their former subjective states in weakened

form,<sup>1</sup> and set the movements *partially* in action; hence the clenching of hands in anger, the contraction in fear, etc. In other words, the physiological states which are paralleled by their concomitant mental states are made up of partial re-excitations of ancestral movements.<sup>1</sup> Theodate Smith<sup>2</sup> conducted a series of experiments on muscular memory in the laboratory and found that the kinaesthetic sensations of speech movements are essential to memory of words; that the memory of visual forms is greatly assisted by associating with the forms to be remembered certain hand movements and as her experiments show, memory thus prepared is from 10 to 22 per cent. freer from error than memory based upon visual observation alone. In this line of speculation, we find ourselves in the end not far from the conviction that the movements of the hand, by racial predisposition and individual education, have some singular connections with the highest level activities of ideation; that thus, in plausible probability, the nervous reaction associated with certain hand movements in lower levels has become represented, "re-represented" and "re-represented" in successive levels, till quite divorced from its previous associate in muscular action, it becomes the nervous structure used exclusively in ideation.

To be explicit, let us trace speculatively by way of illustration the evolution of the nerve processes concerned in a state of moral courage. Our brute-man ancestors did not think courage—they acted it. The kinaesthetic memories of previous similar acts flowed directly into the motor channels of muscular reaction without the complex association of the higher levels. Since consciousness is a concomitant only of sensory processes and not of motor discharges, according to the psychological view now generally accepted, consciousness was of brief duration because the discharge was immediate. Later, however, a portion of the kinaesthetic energy, instead of being wholly discharged into motor channels to excite muscular movement, forced itself upward into higher levels and gradually formed long circuits of sensory irradiation among the structures which are the concomitants of higher ideation. By this irradiation, consciousness was prolonged and the energy given to muscular action lessened. The individual deliberated longer and acted less. The kinaesthetic impulses that discharged into the motor channels of our ancestors, creating in them deeds of physical courage, discharge, in the more complex nervous system of their civilized posterity, into the higher levels and excite this moral courage of thought, let us

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<sup>1</sup> Compare Lindley, *Am. Jour. Psy.*, Vol. VII, p. 506.

<sup>2</sup> *Am. Jour. Psy.*, Vol. VII, pp. 453-490.



hope. Hamlet failed to act—he philosophized. The human race in its evolution, has been playing the role of the Dane over and over again. The moody Hamlet stands meditating in the focus of civilized consciousness while the old tendencies to action in the lower levels, lurk in the emotional twilight of the margin, tingling our nerves and exciting us with the feelings of our ancestry. Such is the prevalent theory summed up in the phrase, "thought is repressed action."

For support of this standpoint, theory would require that distinctly lower grades of intelligence should be accompanied by deficiency in manual motility. The lower primates and the human idiot offer fair tests of this requirement. The ape shows rudimentary degrees of human intelligence, just as he also manifests rudimentary human hand movements. The ape arm is capable of rotation at the shoulder and partially capable of extensions, supination and pronation from the elbow joint, but these powers find only their final perfection in man; some species are able to rotate the forearm almost to the human extent; in common with man many species are able to bring the thumb in opposition to the fingers but compared with that of man the movement is very imperfect. They have nearly all the structural movements of flexion, extension of fingers and even some slight lateral movements.

The feeble minded show marked deficiencies in power of movement and, in general, are wanting in just those movements which specially distinguish the human species from lower animals.

"In the will movements," says Johnson,<sup>1</sup> "the difference between the control of the fundamental and accessory muscles was much more marked in the feeble-minded than in normal children. This was more noticeable, the greater the degree of idiocy. Some who could execute gross movements with regularity and control were wholly deficient in the execution of finer movements." Even those who walked strongly were utterly devoid of grace of movement which is the product of finer control by the higher levels of the nervous system. Mr. Johnson gives a number of tests and observations and concludes: "The foregoing observations and tests are corroborative of Mr. Hancock's conclusion (from normal children) that the fundamental precedes the accessory in development of motor ability. It is important to note that all the spontaneous movements were fundamental. Hardly a single one of them could be considered accessory. They were the swaying of the trunk, the movement of the jaw, swinging of the arm,

<sup>1</sup> *Ped. Sem.*, Vol. III, p. 281.

reeling of the head, and the simplest finger movements." Says Dr. Ireland:<sup>1</sup> "The best and earliest sign of idiocy is the deficiency of the grasp. The hand is flapped or vibrated about instead of being employed to seize or obtain an object. Imbeciles are clumsy in the use of the hands *and it is difficult to teach them any exercise of handicraft requiring method and dexterity.* Even imbeciles are generally very in-expert at such exercises as catching a ball or aiming at anything and *it is difficult to teach them greater dexterity.*"

Dr. Seguin thus describes a typical idiotic hand: "The hand of R. is small, the nails short and brittle, fingers as if unfinished, no power, no skill, only automatic movements mainly from the wrist. He could not put his fingers in any given attitude. He could not rotate on command that wrist so nimble when striking or vibrating automatically. He could obey the movements of elevation and abduction, but not always, nor with anything like precision."

Féré has gathered the data not only of structural defects of the idiotic hand but he also goes so far as to insist that degrees of intelligence among normal individuals show traces of a direct relation to their hand motility. He finds that the arm of normal individuals admits of elbow rotation inwardly, 15° to 25°, and outwardly 200° to 225°. In idiots, this power of rotation is comparatively very limited. Goutton has pointed out that in many idiots and cretins the power is entirely absent. It will be remembered in this connection that in monkeys this ability to rotate the forearm outwardly is 140° at maximum. In the matter of ability readily to bring the ball of the thumb and fingers into opposition a large percentage of the feeble-minded are able merely to bring the finger points together in the pincer form of the monkey tribe. Sometimes there is inability to bring the thumb in opposition to the little finger. This failure in many cases is to be accounted for by the weakness of the thumb—a characteristic Simian weakness. The last joint of the fingers and thumb in monkeys and idiots alike, is frequently abnormally short. Féré<sup>2</sup> compares the length of this joint (the last phalange, or phalangette) of imbeciles with that of normal persons engaged in occupations requiring manual dexterity and finds a range of length expressed in percentage of the length of the whole hand as follows: thumb, 13 to 20 per cent.; index, 10 to 15½ per cent.; middle, 10 to 16 per cent.; ring, 9½ to 16 per cent.; little, 8 to 13 per cent. He concludes: "The subjects in whom one finds the phalangette more developed are in general

<sup>1</sup> Blot on the Brain, p. 257.

<sup>2</sup> Rev. Phil., Vol. XLI, p. 622.

those who have given proof not only of manual dexterity of movement but also of mental development above the average, while the individuals who are singular for the shortness of the phalangette are *without exception* imbeciles." The phalangette of the thumb is largely controlled in its most delicate manipulations of precise movements by the long flexor muscle, which is absent, according to Gratiolet, in anthropoid apes. It is in the movements controlled by this muscle, according to Féré, that imbeciles show a conspicuous weakness. He remarks that he has observed that persons employed in mental work maintain without exercise, nevertheless, a high motility of the thumb muscles. The arrest of development of the ring and little fingers is common among degenerates making many movements impossible; the fingers are short or lack the power of independent flexion or to put themselves in the same plane with the others. The flexion of fingers is always more forcible than extension, and in degenerates this difference is as a rule greatly augmented.

Another series of hand defects of significance is that of the lateral movement of the fingers. This power is partially regulated by the depth of the space between the fingers, a greater depth allowing greater freedom of lateral movements. In the gorilla, for example, the interdigital membrane is large and reaches far up between the fingers, binding their action. Hartman<sup>1</sup> has found this same feature noticeable in many of the lower human races, notably negro. In some species of monkeys the fingers are united. Imbeciles frequently show what seems an atavistic tendency in this direction; in persons of normal intelligence, says Féré, the thumb for example, can be brought to make an angle of 120° to 130° with the index, but in degenerates it is frequently not more than 45°; the same ratio holds with the other finger angles. Johnson<sup>2</sup> found by examination a very general difficulty among feeble-minded children to open and close the fingers laterally; some could open the hand between the index and middle finger but not between others. Some who could open fingers laterally could not open the first finger alone. In attempting these movements false movements were often made; for instance, swinging of wrist, partly closing hand, or shaking whole forearm. These latter substitutions illustrate the weakness of the control of the higher over the lower centers.

Féré concludes regarding the power of independent finger movements as follows: <sup>3</sup>"The disassociated movements of the

<sup>1</sup> Les Singes Anthropoids, Bibl. Sci. Internal, p. 80.

<sup>2</sup> Ped. Sem., Vol. III, p. 28.

<sup>3</sup> Rev. Phil., Vol. XLI, p. 624.

fingers present considerable variation. With individuals of higher intellectual endowment they are more developed and are accomplished with less energy and greater rapidity. In the degree that one descends in degenerescence, these movements are less numerous, less rapid and less precise; while with individuals of greater intelligence, the amount of work of the fingers acting successively is greater than the work of the fingers acting conjointly." In another work<sup>1</sup> Féré shows that ability to move fingers separately, or to move one hand without the other, is small among the imbecile class. The normal individual is better able to direct effort and to concentrate energy into specific members acting independently. This tendency of the imbecile class to simultaneous movements suggests atavism since simultaneity is the dominating law of the fundamental movements and succession is the human characteristic of accessory movements. Simultaneous movements of the hand suggests reversion to the conditions when the hand was a fore limb.

As a rule, in school children, those of quick movement of muscles are considered brighter, mentally, than those of slower movement. Of course this condition may represent a variety of causes, but this fact is very readily apparent on the whole. In a study which was made to trace the rate of school progress of some two hundred children, it was found that 52 per cent. of the most rapid pupils possessed strikingly quick control of the movements while only 8 per cent. of this class were slow of movement; on the other hand among the pupils of slow progress 40 per cent. were strikingly halting in their movements, and only 25 per cent. possessed a ready control. Also, in the matter of precision 54 per cent. of the rapid pupils possessed accuracy of writing movements against 11 per cent. who were not; while among the mentally slowest, 59 per cent. lacked accuracy of movement and 22 per cent. of them were not precise.<sup>1</sup>

The facts which have been reviewed bring out clearly the close, and seemingly organic, relationship existing between these nervous structures controlling the movements which constitute man's superiority over lower animals, and those nervous structures which function human mentality. The mentally defective are commonly deficient in the ability to control these accessory movements and show many similarities to Simian traits of structure and movement. Such facts necessarily push us toward the conclusion that defects of mentality, as in power

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<sup>1</sup> *Epilepsies et Epileptiques.*

<sup>2</sup> Burk: *Individual Pupils vs. Graded System*, Northwest. Monthly, March, 1898.

of movement, are commonly due to the failure of higher levels of the nervous system to become functional — levels which are essential both to a higher class of movements and a higher stage of mentality. It is an interesting corroboration of this view that in the other class of highly specialized accessory movements, speech, idiots show a very common deficiency. Dr. Down from an examination of 200 idiots, 7 to 36 years of age, found 33 mute, 16 semi-mute, 83 with indistinctness, 4 stammering, and 62 with fair speech. It is manifestly incorrect to treat idiots as a single class having a common cause of defect. It is with the congenital class that this inquiry is specially concerned, for under this classification fall those unfortunates that date their defect, in the words of Dr. Down, "from earlier uterine life and in many cases to the germ or sperm cell."<sup>1</sup> The studies upon the finer cortical structures in the brains of congenital idiots, which already have been briefly reviewed in the first pages of this article, show striking deficiencies in number of cells, development of the cells in size and in the association fibres connecting them with other cells. The lower centers in the cord, medulla and pons are much more frequently normal. Kaes, who perhaps has made the most fruitful investigation thus far, voices a growing conclusion that both deficiencies in finer structure and the frequent grosser abnormalities find a common origin in an early embryonic period where an arrest of development has occurred, which has thrown the organism off the track leading to complete human development as it were; thus derailed, the nervous system tends to develop, in some features, toward lower racial forms, dependent upon the period at which the arrest occurred and the structures affected. In this line of speculation, Dr. Down some years ago contributed a classification of congenital idiots according to ethnic types—Negroids, Malays, Indians, Mongols. He asserts that more than 10 per cent. of the congenital feeble-minded children are typical Mongols. "They present characteristics so marked that when members of this type are placed in proximity it is difficult to believe that they are brothers or sisters. In fact their resemblance is infinitely greater than to members of their own family."

The simple educational and psychological significance of the facts of this chapter is that the individual, from conception to senescence, follows the order of development of the race, and that any serious mishaps upon the way cause an arrest of development of his nervous system at some partial level. But the facts, except in these extreme cases of arrest, are far from fatalistic in their inferences. Even among the idiot class, the results of

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<sup>1</sup>Wood's Monographs, Vol. X, p. 320.

education upon the principle of developing the more fundamental in order to develop the accessory, have approached the marvellous. Those two classics on the subject by Dr. Seguin, "The Idiotic Hand"<sup>1</sup> and "The Idiotic Eye,"<sup>2</sup> illuminate the principle by practical results that are of the most significant value to general education; truly does the editor of *Archives of Medicine* say in announcing Dr. Seguin's death that "the great physio-psychological conception (illustrated practically by Dr. Seguin) must in time—perhaps a long time— attract the attention of teachers in kindergarten schools and colleges." Dr. Seguin began the education of the idiot by training of the hand movements, and of these he selected for the first lessons those which were most fundamental—grasping, supporting, letting go, throwing, catching and leading up gradually by some admirable teaching tact to the accessory, and correlation of eye and hand in natural exercises that called forth the pupil's interest. Strangely, after two years education on this plan, the general mentality of the boy whom he describes had also improved to a degree that was marvellous even to teachers. The stimulation of the evolutionary levels, in their natural order, through the hand training had strengthened them also for discharge of mental functions.

#### EVOLUTION OF HAND MOVEMENTS IN THE DEVELOPMENT OF THE NORMAL CHILD.

The topic of the present chapter is a difficult one. We meet a baffling complexity and seeming disorder, upon any logical basis, from the moment of birth. Some of the movements of new-born infants are extremely simple, and a large number seem to be built up by co-ordination of these simple movements. But on the other hand there are strewn throughout infancy and early childhood a number of singular movements, which, at their first appearances are highly complex; they are excited by special stimuli; many of them by irregular modification become adapted to ends for which evidently they were not originally employed. If infants first learned to make all the simple reflexes, and this step performed, then proceeded to combine these elements into new unities, and so on, we would have a logical order to retrace. But there are few evidences either in infancy or in later childhood of such steps from the logically simple to the complex. Preyer has shown that in the case of the eyes, each eye tends to a certain extent to be a law unto itself, that the two do not move in perfect co-ordinated unison until several months have passed; yet the same principle will not apply to the movements of the two arms. This

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<sup>1</sup> *Archives of Medicine.* <sup>2</sup> *Ibid.*

pair of bilateral members tend to move simultaneously, when an adult would use one of them independently.<sup>1</sup> Mrs. Moore's child was eight months before it ever used the two hands simultaneously for different purposes. Such conflicts are inexplicable upon any basis of uniform principle. The evolution theory, however, of course steps forward to explain this anomaly on the ground that in animal ancestry the eyes moved independently of each other, while the arms or the fore limbs, on the contrary, moved by bilateral impulses. The facts of observation make the matter even more complex, for we find in very early infancy many co-ordinated movements of the eye, *under certain conditions*<sup>2</sup> and independent arm movements *under certain conditions*. It may be these can be explained on the biological grounds that certain co-ordinated movements of eyes and independent movements of arms are older or more firmly established than others of the same classes respectively.

*Ready-made Complexes.* We may begin by illustration of some of these singular complex co-ordinations which Minerva-like appear full-fledged at birth. A striking example of this class is offered by Dr. Robinson<sup>3</sup> in experiments upon the ability of new-born infants to hold themselves suspended by grasping a finger or a bar. If we accept the current theory that the immediate ancestry of man lived in trees as many species of monkeys now do, this movement, though highly complex, involving the combination and co-ordination of several muscles of the arm, wrist, and fingers, is, in an evolutionary sense, fundamental. Dr. Robinson has kept records of experiments upon sixty infants, carried out within an hour after birth in the case of at least one-half of them. The infant subject was allowed to grasp a horizontal bar, or a finger, and left suspended in this way, sustaining its own weight. He says that in every case, with only two exceptions, the child was able to hold on "for at least 10 seconds: in 12 cases with infants under one hour old half a minute passed before the grasp relaxed, and in three or four nearly a minute. When about four days old I found the strength had increased, and that nearly all when tried at this age could sustain their weight for half a minute. At about a fortnight or three weeks after birth, the faculty appeared to have attained its maximum, for several at this period succeeded in hanging for over a minute and one-half, two for just two minutes, and one infant of three weeks of age for two minutes and thirty-five seconds."

<sup>1</sup> Mrs. W. S. Hall: First 500 days of Child's Life, Child Study Monthly, Dec., 1896.

<sup>2</sup> Mrs. K. C. Moore: Mental Development of a Child, Psy. Rev. Monograph Supp., No. 3.

<sup>3</sup> Darwinism in Nursery, Nineteenth Century, Nov., 1891.

Dr. Robinson remarks that the feat is one which would tax the powers of an adult. Wallace has recorded a similar condition of the infant monkey's grasp; one which had seemed secured a hold upon his beard clung so tightly that Wallace was not able, without help, to free himself. In similar vein Dr. Mumford<sup>1</sup> has made an interesting speculation showing the analogy of certain very early movements of the infant to the paddling movements of water animals. He thinks them survival movements of aquatic life. These movements he points out disappear early in the first year, or are modified to form elements of more complex movements higher in the evolutionary scale. The feat of hanging from a stick or finger by the hands, logically would imply the prior development of the arm, shoulder, wrist and finger movements. But such are not the facts. The child grasps a stick and hangs suspended by his arms, long before he is able to pick up any object, or put his two hands together or lift hand to mouth. Logically, the grasp of the whole hand would follow the grasp by the parts, but observation shows us that a certain kind of complex grasp is one of the earliest movements, developed long before some of the very simplest finger movements. Any logical explanation fails at this point. Evolutionary explanation is plausible, for so far as the positive evidence of observation goes the more fundamental and older racial movements appear before the newer and less fundamental, regardless of the order of complexity, except in so far as the accessory as a rule tends to be more complex than the fundamental.

If the human adult or child, beyond the age of infancy, grasps some object, as a saucer or a cup, so large that he cannot put the fingers around it, the arm will be extended toward the object, thumb uppermost, the palm facing upward. The thumb plays the chief role; the last joint hooks over the rim and presses firmly downward, while the fingers underneath press in an opposite direction. This is not the Simian method. The Simian thumb is not strong nor motile enough for one reason, and in the second place it is not its habitual form of grasp. The thumb in the monkey is comparatively of little use, and, as already stated, some species are lacking in the muscle of its chief control. The fingers are used chiefly as a single hook, and in the most arboreal species<sup>1</sup> the fingers have grown together to form a grasping hook. With them, the hand in grasping is used in just the reverse form. The fingers are uppermost, thumb underneath, the palm downward, and the grasp is accomplished by the fingers pressing downwards

<sup>1</sup> Survival Movements of Human Infancy, Brain, No. 79, 1897.

<sup>1</sup> Buckman: Babies and Monkeys, Nineteenth Century, Nov., 1894.



against the palm. Infants follow the method of monkeys, not of man. Give a baby a saucer, or better a glass of water, and note that the rim is seized by the hand with the palm downward, instead of upward as in the case of an older person, while the thumb plays the role of a useless fifth wheel to a wagon.

By what process is the transition to the adult form of grasp accomplished? Undoubtedly imitation is the final directing cause, but there is a functional difficulty in the retarded development of the infant's thumb. He is born with a monkey thumb and must first obtain a human thumb and be able to use it in perfect opposition. Preyer, Mumford and Mrs. Winfred S. Hall have given detailed descriptions of the development of the thumb. For the first two or three months of life the thumb is really a nuisance to the child and is continually in the way. Generally it is curled inside of the grasp. In the case of Mrs. Hall's child it was not till the 11th week that the thumb was brought outside the hand when the latter was clenched.

On the fifth day, Axel Preyer clasped with his fingers his father's finger and it was not until the 12th week that there was certain evidence that the thumb was reflexly brought into use, and even in the 32d week, the movement was not entirely perfect. Mrs. Moore's child was first observed to use the thumb in opposition during 12th week, but she records that it was not till the end of the first year that this method had become established. In the case of Dr. Mumford's child in the 12th week, the diary records: "Does not use his thumb properly for grasping; when he tries to bring the bottle toward him he tucks the thumb out of the way. For the past fortnight he has begun to grasp with his fingers." In the 16th week there is this record: "Has been using his thumb more and more and now never shuts it inside but always outside." In the 28th week, the last record given, we learn that "Grasping movements are much more perfect but still he does not pick up things between the tip of the thumb and finger. Occasionally he grasps a thing between the last joint of the thumb and finger." Mumford concludes that it is often six months before the development of thumb make the elaborate movements of the human grasp possible. While the thumb of the hand is thus gradually gaining in motility and strength *in a human direction*, the great toe is losing motility and strength, *also in a human direction*. Robinson<sup>1</sup> attests from a number of experiments upon new born infants of an English work-house, that young infants curl their toes over anything grasp-

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<sup>1</sup> British Med. Jour., Dec. 5, 1891.

able. When either the palm of the hand or the sole of the foot is touched, the reflex grasp of the fingers or toes is occasioned. Buckman observes that a baby can move any of its toes independently and can move them one from another so as to make a V between any of them. Preyer records that on the seventh day, his child grasped a thin pencil by his toes exactly as by the hand.<sup>1</sup> As the child grows older this power is lost. It is a movement which in the development of humanity has been lost. Mumford records that in the 28th week the toes of his child had lost almost completely the tendency to grasp.

Several other hand movements could be more or less definitely traced, commencing in the infant with complex reflexes, inexplicable as yet upon any theory except that of evolutionary origin, and developing into human forms by modifications and additions that show no trace of logical arrangement. Among these to which reference might be given are the change from rhythmical sluggish movements of the fingers (which Mumford considers a survival from aquatic habits) to human quickness; development from the hooked form and use of the fingers,<sup>2</sup> to independent movement of finger; the habit of using the index to poke about in investigating crannies or new objects;<sup>3</sup> the method of grasping a ball, etc. These constitute but one class of elements with which the child commences his career. They are not simple in the sense of logic for they are not complexes made up by co-ordination of several simple movements previously possessed; the infants who hang suspended by the grasp do not usually grasp objects which merely touch their fingers; the grasping reflex is only set off by touch in the palm of the hand.<sup>4</sup>

Nor do all these complex but original co-ordinations appear immediately at birth. They are scattered along through infancy and childhood suggestively corresponding to the development by distinct parts observed in the growth of the nervous system. The teasing and bullying instincts of children offer suggestive illustration. Among the commonest movements in these activities may be observed;<sup>5</sup> pursuing, throwing missiles, striking, throwing down, holding down, dancing about conquered victim, laughing, clapping hands, pulling hair, pulling ears, etc. Children's natural games are largely made up of mild forms of these elements, the more malevolent tendencies having been elided. Whence came these movements which children acquire without effort and which they execute

<sup>1</sup> Senses and Will, p. 245.

<sup>2</sup> Buckman : *Ibid.*

<sup>3</sup> Mumford : *Ibid.*

<sup>4</sup> Mrs. Moore, S. and W. 243.

<sup>5</sup> Burk : *Pedagogical Seminary*, April, 1897.

with such natural grace and precision. They have no utilitarian bearing upon the duties of civilized life. A plausible hypothesis classes them with the grasping reflexes of newborn infants—habits common to the race in its primitive conditions and carried forward in the structure of the lower levels of the nervous system.

These complex movements are ultimate units; they do not conform to the purposes of civilized human conduct and are not explicable nor reducible by any process of logical explanation. Corresponding to them are psychic states of equal complexity which find no explanation in the civilized child's present environment. There is a principle well known in physiology and embryology, that a structure or a movement—useful for a certain purpose in a certain stage of the biological scale, loses this purpose in a higher stage and through modification becomes used for some entirely different purpose. This is what Wundt terms heterogony of purpose. Thus as we have seen the fingers have been used for locomotion, then for seizing, grasping, and finally, in man, their ancient purpose is wholly lost, and an entirely new series of uses has taken its place, though the bony structure has not materially changed. Now what are the applications of this view to many of these strange complexes that appear in early childhood, even to include such seemingly evil forms as those which appear in cruelty, bullying and teasing? May it not be, indeed, that they constitute a level in the evolutionary hierarchy, and though in themselves useless, are nevertheless an essential platform from which the co-ordinations of a higher and useful level are formed? It is plausible that the child needs to live to some extent the life of his ancestors in order actually to develop in his own nervous system the kinæsthetic sensations which by the process of higher evolution may serve as the basis for higher forms of activity in the highest levels? It becomes indeed a question of extreme nicety to determine just the exact moment when sufficient actual experience has fully established the racial tendency and the time for inhibition and radiation of the force into higher cerebral associations should follow. Danger of arrest of development at the lower stage is as important as that the fundamental impressions should not be made. Such a view gives these curious phenomena a natural place in child life, and emphasizes the probability that children's plays and games, as mild vaccination forms, serve as mediations between brutal ancestral tendencies in the nervous system, and the higher levels employed in altruistic modern life, between savage racial action and civilized ideation.

*Co-ordination of Simple Movements.* One who watches a young infant will notice a number of jerky movements contin-

ually occurring in practically all the muscles of the body. Some are merely slight twitchings of fingers and small muscles, and they range in scope to those of flinging hand, forearm, or whole arm about vigorously; the legs are moved in the same way. In the same class we must place the play of features, turnings of the eye and various other awkward movements. In some of these movements Mumford finds a rhythm which he thus describes. "Slow rhythmical movements of flexion and extension of the fingers occur, which instead of possessing the quick-incisive character of voluntary movements partake of the sluggish rhythm so familiar to the visitors to the tanks of an aquarium. They often occur in a series of three at a time during a quarter of a minute; then follows a pause during which there is apparently an accumulation of energy in the nerve cells. Then another series of spontaneous discharges takes place, to be in turn followed by another pause." Preyer has described the whole class of these movements as "impulsive" and labors to show that they are "spontaneous" impulses from the nervous system, occurring without external stimulus but exclusively by organic or nutritive processes. This clear-cut division which excludes all external stimulus probably is to be seriously questioned, but this is immaterial for the present. Notwithstanding the evident fact that these movements possess strength and energy,<sup>1</sup> the new born infant is unable to direct his hand or arm movements. He cannot for some days or even weeks bring his hand to his mouth. Accidentally, in these movements, the hand frequently is thrown to the mouth and the infant sucks his finger; he is unable to remove the thumb from his mouth and must wait till some adult or lucky accident of movement removes it for him. Without purpose and without manifest external stimulus, the elbow, wrist, and finger joints are continually being flexed. Even months before birth these purposeless movements had commenced. What is the significance? As Flehsig has shown, in earliest infancy, practically the whole cerebral cortex is scarcely connected by mature fibres with the centers of action in the spinal cord, medulla and pons. It is not till well into the first month that these earliest connections are made on the sensory side, and the motor connections by which activity is cerebrally directed do not appear until after the sensory has developed. The child is several months old before all portions of the sensory bundles of fibres which pass from the cord to the cortex show maturity in every part.

These movements are most common in the earliest weeks of infancy, and tend gradually to disappear. The fact that the

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<sup>1</sup>The strength, under specific stimuli, is demonstrated by the grasp and the power of bodily suspension.

connections of the lower centers with the cortex are not made till late, leaves us to conclude that these early movements are the products of spinal activity, uncontrolled as yet by the higher levels. They are lowest level movements in their simplicity, unmodified by the inhibitions of later human experience which lie undeveloped in the higher strata of the nervous system. They must represent the movements which are racially the oldest entering as elements into human activity. If lower animal movements do appear in human activity, it is in this period we most safely can look for them in their most undifferentiated form. Later in infancy the first connections with the cortex are established. Then sensory fibres go upward, and later motor fibres go downward from these middle centers, to inhibit and control the lower movements in certain particulars. Associations of cell with cell, center with center, develop to modify and make more precise or offer greater alterations in these modifications. Later, a still higher system of control is superposed upon this. From this point of view, the purposeless movements of infants are more intelligible. They are movements without higher inhibition, movements as yet without halter or rein. The objective evidence bears out this supposition. Gradually, this flopping of arm, rhythmic flexions, and extensions, and nervous twitchings tend to disappear. Just in proportion to the capability of an infant to execute voluntary movements of a given limb or organ, these vagrant movements disappear. The two opposed processes are gradual, and Warner<sup>1</sup> records that at three years microkinesis, as he terms it, is still present. It is questionable that these movements ever do completely disappear, as experiments upon the ataxiagraph show. In form, these purposeless movements may be, as Mumford and others claim, survival movements of past ancestry. As such they are useless and senseless, and if this were their only significance they well might be destroyed. Nevertheless they unquestionably have a far more significant place. Children without them are idiots.<sup>2</sup> The modern will theory certainly gives them a functional place. Before a movement can become voluntary, certain sensations of the muscles, skin, joints, etc., occasioned by this movement, must be recorded in memory. These sensations, in form of memory deposit, become the stimuli by which voluntary action is directed and controlled. By these memory traces, just the exact amount of force, the direction, and the method of precision is measured out, when a given movement comes to be voluntarily employed. Sully gives an apt description of this

<sup>1</sup> *Mental Science*, April, 1889, p. 36.

<sup>2</sup> *Take's Dictionary of Psychological Medicine*, p. 469.

process in an infant eleven weeks old.<sup>1</sup> "Among the objects that attracted him was his mamma's dress, which had a dark ground with small white flower pattern. His hand accidentally came in contact with one of the folds of her dress lying over the breast. In a dozen times or more he repeated the movement of stretching out his hand, clutching the fold and giving it a good pull. A hasty reasoner might easily suppose that the child had now learned to reach out to an object when only seen. But the sequel showed this was not the case. Four weeks later, the diary observes, the child as yet made no attempt to grasp an object offered to him. The clutching was thus a blind movement. Yet it was doubtless a step in the process of learning to grasp." A simple explanation would be that the kinæsthetic impulses consequent from the first accidental reaching and clutching served as stimuli by which the action was repeated, and so on till fatigue set in.

In the light of this consideration, the importance of these rhythmic movements, be they survivals of aquatic and arboreal life or not, is manifest. If through any disorder, the lower levels are unable to produce them and the infant lies quiet and motionless, these sensations, necessary for willed action, never occur, the physical concomitants of mentality are never stored, and the infant lives to become an idiot. These movements, the flotsam and the jetsam of spinal activity uncontrolled as yet by higher centers, are the ultimate units. If we admit that they are survival movements we have here an illustration of a widespread physiological principle, that new uses are grafted upon old structures.

The modifications of the ultimates, whether complex or comparatively simple, with which the infant begins life, proceeds in several directions: (1) the breaking up of old bilateral and simultaneous tendencies, characteristic of central movements; (2) the growth of independent movements of smaller parts that previously only moved in conjunction with larger wholes; (3) the co-ordination of various series to form long and complex sequences as we finally find them illustrated by writing, sewing, piano-playing, etc.; (4) the development of precision and accuracy; and finally (5) the response of different movements to a great variety of different stimuli. These modifications perhaps represent the chief accessory lines of development that distinguish human movements as such. Any attempt to give a concrete review of these movements would of course require a volume. Merely a few typical illustrations will be made. Under head of bilateral tendencies which give way to independent movements, Mrs. Hall<sup>1</sup> reports that during the first

<sup>1</sup> *Studies of Childhood*, p. 413. <sup>1</sup> *Ibid.*

few months the right hand was always carried to the mouth with the simultaneous movement of the left hand. "Even when putting the thumb to his mouth he used the left hand in this way, and finally held the left hand under the right hand while sucking the right thumb. If the left hand was confined so that he could not use it in this way, it was noticeably harder for him to put the right hand to his mouth, while it always annoyed him, causing him to cry." We must be careful not to confuse the age of a movement with the age of a child. I think it is probably true that any new hand movement attempted at any age tends to be bilaterally simultaneous. For example, children of any age, in learning to play the piano are able only after considerable practice, to make movements independently with each hand. Few adults, without practice, will be able to move the left hand in a circle to the left while the right is making a similar circle to the right. Hancock experimented upon 142 children asking them to pat the top of the head with one hand while they made a circular motion about the breast with the other. Forty-five failed entirely, while the others were more or less successful after a time. Bilateral movement is older than independent movement of the hands; the former doubtless is the order of the lower levels; it is overcome by control from the higher accessory centers.

The formation of a successive series from parts previously existing may be illustrated by the following type described by Mrs. Hall. The age of the child was 13 months. "After watching two children play ball he was allowed to join the game. The ball was rolled to him, he picked it up, then leaning far forward placed it upon the floor, but could not push it away. His hand was repeatedly given an impulse which sent the ball forward but even then he could not roll it alone. The ball was thrown to him and he tried to return it, but after raising his arm and reaching the hand forward he could not propel the ball. Again he was assisted in making the requisite motion and when the ball left his hand he screamed with delight. After playing fifteen or twenty minutes, he raised the arm as if to throw the ball, then opened his hand and let it drop out but was unable to give it the forward impulse. The game was played daily and each time at the beginning of the play he experienced the old difficulty; but each day he succeeded after fewer trials than were necessary on the previous occasion, and finally learned to throw the ball in an awkward way. By the 58th week he had become able to throw it in the general direction of his effort, and by the 60th week to throw it with ease and with considerable accuracy."

In this description the difficulties of nervous co-ordination are clearly outlined. The child had already mastered all the

movements taken separately, but while these nerve centers could act separately, their co-ordination, not only in a general order of discharge, but in order of delicate nicety of time, was impossible. The forearm must be extended at just the exact moment and the ball released at another precise moment. When we consider the infinite complexity of the whole process our wonder is that it is so quickly acquired. The suggestion leads to the query whether or not movements of similar complexity, but entirely new in racial experience, are learned as readily in later life. I hardly believe they are. Throwing is almost an exclusively human movement though some monkeys have been known to possess it. In strictly human experience, however, it is old and firmly established. May it not be possible that the explanation for the comparative ease with which the child learns this movement be accounted for on the theory that in learning he is retracing paths in his nervous system, more or less distinctly established by ancestral experience? An adult required to perform a movement of similar complexity but entirely new in human experience would not learn as readily and rapidly as the child of thirteen months. Some such supposition is necessary to account for such facts of which this illustration is but a type.

A more complex type of co-ordination, though it represents a much earlier period of life, is illustrated by the following comical instance.<sup>1</sup> "In the 17th week the breast was shown to him while he still held his thumb in his mouth, and then for the first time he seemed to realize that the two were separate and he must release the thumb before obtaining the breast. Up to this time the thumb had been removed for him, but on this occasion no assistance was given him until he himself had made an effort and had failed. He looked at the breast, then worked at the thumb, then cried, but could not take it from his mouth. He was therefore assisted and given the breast. Each time he nursed he was required to make the effort to remove the thumb, and was afterwards given such help as was necessary. Late the next day, after a long trial and some crying, he succeeded in his efforts, whereupon he made a little sound of satisfaction and seized the breast. Six days later he was able to remove the thumb at will and with ease." Leaving out the writer's interpolaton of mental motives, which, perhaps, are not essential, we might, perhaps, express the physical conditions something as follows: In the form of accident, so to speak, the nervous apparatus is matured sufficiently to place the hand to the mouth and also to remove it; further, there is established already a co-ordination between

<sup>1</sup> Mrs. Hall: *Ibid.*



the centers of smell or of sight, so that when stimulated suitably, they excite the movements necessary to take the breast; but the presence of the ungovernable thumb prevents. We clearly have here the separate parts of a somewhat complex co-ordination, but co-ordination is wanting. We know certainly that at this age, four months, some paths to and from the central convolutions of the cortex are matured, especially on the sensory side. Of all sensations that would first develop, on account of their early use, we must conclude that those concerned directly and indirectly with sucking would be conveyed there. Of all kinaesthetic sensations of arm and hand movements which also would be likely to be the earliest to develop in the middle cortical level, those of movement of the hand to and from the mouth would be first, for these are the earliest acquired movements. For six days this hand is specifically trained in removing itself, in close association with sensation from olfactory, visual and hunger centers that are clamorously importuning that something be done, and that something be done quickly. An accident in the path of predisposition solves the difficulty for the first time. Each repetition of it makes the transit easier. The co-ordination is established and it is established in just the same way that racial infancy has established it. Gradually higher centers are developed receiving impulses from the lower, co-ordinating them anew and discharging inhibitive motor impulses, substituting or adding other movements. These, at a still later period, are made the basis for a similar superposition. The earliest progress of a child in movements is in the realm of what is racially fixed and determined. Only with the maturing of the highest centers, factors of extreme plasticity, choice, freedom from racial predisposition are introduced.

This brings us to a point of view of the highest pedagogical significance, to wit, that in the development of co-ordination from lowest to highest, the power of evolutionary habit decreases, and the possibility for special modification increases; that there is a progress in teachableness, or at least the term, education, must be taken in two different senses. In the lower strata of development, where the steps have been worn by racial experience, education that is most serviceable will be that which takes its cue from the racial stimuli and concerns itself with leading co-ordination to take these fixed steps as truly as possible. But later, as the higher strata are reached, when the movement emerges from this deep worn gorge that ancestry has trodden and comes to the point where racial paths are divergent and indistinct, the definition of education changes. Education has now a wider sweep of vision, and instead of following paths, may sight distant goals and lead

more directly to it. In a different terminology we might call this early education which is restricted to aiding the child to follow in the steps of his ancestors "fundamental," and that which finds its place later, that which comes in when racial paths grow shallow and divergent, and originality more possible, we might call "accessory" education. Taking wider range in this thought, we may consider the child as the sum of his movements. We must remember, nevertheless, the principle of development by parts, by which some parts reach maturity at later periods than others so that we can never say, in an exact sense, that the child is now in the "fundamental" period of education and then in the "accessory." But in a crude, inexact way, it is certainly true that more lines of accessory education are possible in adolescence than in childhood, more in childhood than in infancy. Using the word "teachable" in the accessory sense, we may say that the child is far more teachable than the infant. Dr. Harris has said that education must be governed chiefly by the needs of objective environment. This assertion is too universal. It is education defined only in the accessory sense. A teacher with only this view plays the part of the bull in a china shop in dealing with those mechanisms of fundamental education which would require us merely to follow racial traces.

There is a familiar dispute in pedagogy whether or not the child should be always allowed to follow his inclinations. One party maintains the extreme position that we should follow blindly the child's interest. Another party stands aghast at the proposal. From this present standpoint taken must we not first discover whether a specific tendency in question is "fundamental" or "accessory?" If deeply fundamental, we must follow nature. If the tendency is one in its accessory period of development, we may perhaps allow objective factors largely to determine.

The child traverses before he is six or seven years old, not only the long deep worn road of racial ancestry, reaching back perhaps as far as arboreal or even aquatic life, but I think we may say, he takes a few paces in certain few co-ordinations that are his own, blazes a few trees and leaves his mark. As we shall later see, by six years of age, he shows evidences in many lines of being far upon the highway of distinctively human capabilities of movement. His fingers and hand that once tended to act only upon the lower simultaneous principle, now can move in fair degree by the principles of independence, and of succession. In the delicate steadiness of central movements and the complex co-ordinations requiring delicate peripheral movements, he has probably acquired half of the ability he ever will acquire. His nervous system has made a prodigious

growth—far outstripping any other system. The co-ordinations which have made this possible are the products of this growth.

#### DEVELOPMENT OF HAND MOVEMENTS DURING SCHOOL AGES.

The present chapter will undertake to review briefly the few studies which have been made upon children of school ages by psycho-physical methods, to determine the rapidity, accuracy, strength and maturity, and fluctuating periods in the development of hand movements. The data, incidentally, however, is suggestive for many other pedagogical problems.

*Rapidity of Movement.* Dr. W. L. Bryan,<sup>1</sup> in Worcester, and Dr. Gilbert at Yale<sup>2</sup> and Iowa,<sup>3</sup> have experimented upon the degree of rapidity with which children of different ages were able to tap an electric key which automatically recorded results. Dr. Bryan thus tested four sets of arm muscles—shoulder, elbow, wrist and metacarpo-phalangeal finger-joints. In order to secure the free separation of these sets of muscles, the arm of the subject was clamped by means of certain devices to allow movement only of the specific set of muscles. The test in all cases was the greatest possible number of taps the subject could execute in five seconds.<sup>4</sup> The number of children (public schools of Worcester) used in the results here referred to is 729. They ranged in age from 5 to 16 years.

The following tables for boys and girls give the arithmetical mean of the tests (right arm) of all boys, and of all girls of a given age.

TABLE A.—Boys.

Age . . . . .	5	6	7	8	9	10	11	12	13	14	15	16
No. . . . .	14	26	35	33	43	37	36	33	34	41	32	26
Finger . . . . .	19.6	19.5	21.0	23.1	24.4	25.2	27.0	29.3	28.7	31.5	31.6	33.9
Wrist . . . . .	20.1	23.0	23.7	26.3	27.8	28.5	30.3	31.6	32.3	33.0	34.2	35.9
Elbow . . . . .	22.7	23.5	24.2	26.1	28.2	28.1	29.3	29.9	31.0	32.7	31.5	32.7
Shoulder . . . . .	18.4	19.8	20.5	22.3	24.1	22.6	24.1	25.0	25.5	27.2	26.3	28.7

#### Girls.

Age . . . . .	6	7	8	9	10	11	12	13	14	15	16
No. . . . .	28	32	33	43	37	36	33	34	41	32	26
Finger . . . . .	19.8	20.7	22.2	24.0	25.8	27.1	28.2	30.3	29.5	29.1	31.3
Wrist . . . . .	21.6	23.1	24.3	25.5	28.5	30.4	31.6	33.2	30.3	30.9	33.3
Elbow . . . . .	22.7	23.2	24.4	25.4	27.5	28.6	29.4	30.5	28.8	29.3	30.1
Shoulder . . . . .	19.9	20.2	21.9	22.7	22.6	24.9	25.7	27.5	26.6	26.0	27.9

<sup>1</sup>Development of Voluntary Motor Ability, *Am. Jour. Psy.*, Nov. 1892.

<sup>2</sup>Studies from Yale Psy. Lab., Vol. I.

<sup>3</sup>Univ. of Iowa Studies in Psy., Vol. I.

<sup>4</sup>The mechanism and conditions are so complex in detail that the reader must be referred to the original article for them.

Dr. Gilbert has made two studies upon rapidity of tapping, one upon New Haven children and one upon Iowa children. In his tests the elbow was held free from the table and the arm was in no way clamped. The subject tapped with the finger but the movement must be interpreted largely as that of a wrist movement. The number of children was approximately 50 for each sex and each age, from 6 to 17 years of age. The number of taps in five seconds for both sexes is shown by the following table:

TABLE B.

Age . . . . .	6	7	8	9	10	11	12	13	14	15	16	17	18	19
New Haven Boys	21.0	22.8	24.9	25.8	27.7	29.7	30.3	29.8	31.2	31.3	33.0	35.0		
Iowa Boys . . . .	22.1	23.3	25.8	27.1	28.3	28.1	30.1	31.1	32.4	34.0	34.0	34.4	36.0	36.7
New Haven Girls	19.7	21.2	23.9	25.0	26.9	27.8	29.6	28.1	28.0	29.8	31.8	31.5		
Iowa Girls . . . .	22.3	24.2	26.0	26.7	26.2	28.0	29.3	29.5	29.4	31.3	32.2	33.8	34.3	35.3

Without holding Drs. Bryan and Gilbert responsible for the form of all conclusions, we may draw from their studies the following inferences:

I. The rapidity of motor ability of the hand and arm, as indicated by tapping, increases, on the whole, with age and does not reach maturity until the adolescent period.

The results of both Dr. Bryan's and Dr. Gilbert's studies agree in demonstrating this fact conclusively. The rate, though subject to several fluctuations, very significantly increases from six years through the pubescent period. The immaturity of this movement at the age of entering school is shown by the following table of percentages, assuming the rate of tapping at 16 years as 100 per cent.

TABLE C.

	Per cent. of 16-yr. ability possessed at 6 years of age.		Per cent. of 16-yr. ability acquired between 6 and 16 years.	
	Boys.	Girls.	Boys.	Girls.
(Bryan.)				
Finger . . . . .	57	63	43	37
Wrist . . . . .	64	65	36	35
Elbow . . . . .	72	75	28	25
Shoulder . . . . .	69	71	31	29
(Gilbert.)				
Hand (N. H.) . . .	64	62	36	38
Hand (Iowa) . . .	65	69	35	31

None of Dr. Bryan's tests are directly comparable with Dr. Gilbert's, since the subjects in latter held the arm entirely free,

and their movement, therefore, is probably a combination of all four of the movements studied by Dr. Bryan.

This fact of the comparative immaturity of children's motor ability excites the pedagogical inquiry whether or not in the existing school requirements, stick laying, needle work, pencil work, etc., of the kindergarten (children under 6 years), and in the writing and drawing of primary children there is intelligent realization that the child's ability, so far as rapidity of movement is a symbol of maturity, is only 60 to 70 per cent. of what it is at 16 years.

II. Girls mature earlier than boys in rapidity of hand and arm movements. This is manifest by a glance at the tables. As shown in Table C, the girls in all but one test (New Haven) have, at 6 years, reached a larger percentage of their 16-year ability than the boys. At 13 years girls have reached practical maturity, and the rate in some of the tests actually decreases after that age. Bryan's girls at 13 years have acquired 97 per cent in the finger test, 99 per cent. in the wrist test, 101 per cent. in the elbow test, and 98.2 per cent. in the shoulder test. In general, therefore, we may say, girls reach practical maturity in rapidity of arm and hand movements at 13 years, while boys increase very materially their ability after 15 years of age.

III. The rate of improvement in rapidity is not regular from year to year, but proceeds by very marked fluctuations, or rhythmical vibrations. Sometimes the rate is very rapid, and again slow, even in some years showing a decrease from the rate of the previous year. Both Bryan's and Gilbert's tables agree in showing four periods of acceleration and four periods of retardation in rate between the years 6 and 17, though there is slight divergence for specific years. The years of highest rate for boys are as follows :

Worcester,	8th and 9th,	11th,	14th,	16th.
New Haven,	8th,	10th and 11th,	14th,	16th.
Iowa,	8th,	12th,	14th and 15th,	18th.

The years of lowest rate are as follows :

Worcester,	10th,	13th,	15th.
New Haven,	9th,	13th,	15th.
Iowa,	11th,	13th,	16th.

IV. Rapidity of movements of hand and arm, in tapping, tends to be greatest when the rate of growth in height and weight is least, and *vice versa*.

This relationship is shown by comparison of the annual rate of growth in height, weight, as given by Dr. Gilbert, and, in the case of Worcester children, by measurements and weighings taken by Dr. G. M. West. In making the conclusion we need not necessarily presume upon any organic relation

between rapidity and the growth rate, but it is probable that the processes of rapid anabolism in the addition of new tissues, at least interferes with the dexterity of movement. In Bryan's data the 10th and 15th years, which are the lowest in tapping ability, are the highest in growth rate. In the New Haven study the years of retarded tapping ability are the 9th, 13th, 15th and 17th; while the years of accelerated growth rate are the 9th, 11th, 13th and 15th.

V. The more central (fundamental) movements tend to mature earlier than the less central (less fundamental) movements.

Dr. Bryan's tests, which deal with the movements of shoulder, and elbow, wrist and finger, separately, offer evidence upon this point, though perhaps strictly speaking, no one of these movements, except that of the finger, can be considered exclusively accessory or fundamental. In table D this relative immaturity of the finger movement is clearly shown. At 6 years, the finger has acquired, in both girls and boys, a distinctly smaller percentage of its ability at 16 years of age, than any of the others, and the wrist movement is less developed than elbow and shoulder. It has been shown that growth in power proceeds by rhythms and it becomes interesting to know in quantitative form the relative amounts of development that are added within each of these rhythms of advancing age. Table D is constructed with a view of showing this. Each retardation with its succeeding acceleration is considered a period; there are thus in the case of boys four periods: 6 to 9, 9 to 12, 12 to 14, 14 to 16; in the case of girls three periods: 6 to 10, 10 to 13, 13 to 16. The tapping ability at 16 years is taken as 100 per cent., and the figures in the columns indicate the percentage of this 16-year ability added in each of these respective rhythms:

TABLE D.  
*Boys' Right Arm.*

Age . . . . .	Up to 6 years.	6-9	9-12	12-14	14-16	Total at 16.
Finger . . . . .	58	14	14	7	7	100
Wrist . . . . .	64	13	11	4	8	100
Elbow . . . . .	72	14	5	9	0	100
Shoulder . . . . .	69	15	7	4	5	100

*Girls' Right Arm.*

Age . . . . .	Up to 6 years.	6-10	10-13	13-16	Total at 16.
Finger . . . . .	63	20	14	3	100
Wrist . . . . .	65	21	14	0	100
Elbow . . . . .	75	15	10	0	100
Shoulder . . . . .	71	10	18	1	100

These tables show : (1) that in both boys and girls alike, the elbow and shoulder movements have reached a larger per cent. of their mature power than the finger and wrist movements ; of the two classes the finger is doubtless more of an accessory movement and of later evolutionary development ; (2) that the finger movement acquires a large per cent. of its ability after nine or ten years of age— 28 % in the boys and 17.5 % in the girls. Dr. Bryan, by a different series of calculations, reaches the same conclusions and says : "These results show that the shoulder grows most slowly and the elbow slightly faster, the wrist and finger very much more rapidly." A table stating the number of taps, the elbow, wrist and finger exceeds that of the shoulder, at each age, shows that while this surplus in the case of the elbow is only slight throughout the period from 6 to 16 ; in the case of the wrist, this surplus doubles and increases from six to sixteen fold. The wrist and finger do not gain materially upon the shoulder until the 11th year and then the finger rates, relatively, spring forward at a greatly accelerated rate. The explanation suggests itself that the shoulder as a central movement has passed the period of extreme nascency very early, the elbow follows, the wrist makes its gains still later and the period of nascency for the finger is certainly not till after 10 years of age and probably does not reach its real culmination in power until sixteen years. Such nascencies have important significance in the management of manual school work.

*Development of Strength.* Peron early in this century showed by experiments with the dynamometer that Malays and the natives of New Holland are distinctly inferior, in strength of the hand and arm, to French marines. That the civilized races are distinctly superior in hand and arm strength to the lower races of man has many times since been confirmed by Manouvrier<sup>1</sup> and others. M. Féré goes further and contends that among individuals of the same race, the more intelligent have the greater strength of hand. He says<sup>2</sup> that the same dynamometer test, taken upon individuals belonging to different classes of society, have shown that the pressure produced by the effort of flexing the fingers is less with workmen whose profession is exclusively manual than with those whose work requires less muscular force, but whose intelligence comes more into play ; and further, that the muscular power is still greater with those of the liberal profession of the same age. The close intimacy of mentality and hand force is demonstrated by M. Féré's well known

<sup>1</sup> Rev. Philos., 1884, Vol. I, p. 645.

<sup>2</sup> Rev. Philos., Vol. XLI, p. 623.

dynamometric experiments<sup>1</sup> showing that the power is very significantly affected by emotional and intellectual states. A subject whose dynamometric force is normally 50-55, shows a decrease to 45 when affected by a disagreeable odor, while an agreeable one causes an increase to 65. In another subject the odor of musk raises the force from a normal 23 to 46. Music and colors produce similar varying effects and various intellectual states show no less pronounced influences. Féré formulates the law from his dynamometric tests that the energy of momentary effort is in proportion to the habitual intellectual functions.

The few statistical studies which have been attempted upon the development of strength during the growing years of childhood and adolescence have been made by Dr. Porter upon St. Louis children,<sup>2</sup> Dr. Gilbert upon Iowa<sup>3</sup> children, and Mr. Roberts in England.<sup>4</sup> The following table gives the absolute annual increments of strength obtained by subtracting the test of one year from that of the next. Dr. Porter's test was made by means of the dynamometer, an instrument which registered mainly the hand-grip power, which, as we have seen, involves one of the most fundamental movements appearing in the first hours of life. Dr. Gilbert's wrist lift involves the hand and fingers, but the principal strain is upon the wrist. The arm

TABLE E.

AGE.	PORTER. Hand-squeeze. Annual increase in kg.		GILBERT. Wrist-lift. Annual increase in kg.		ROBERTS. Arm-lift. Annual increase in lbs.		GILBERT. Arm-lift. Annual increase in kg.	
	B.	G.	B.	G.	B.	G.	B.	G.
	6½ to 7½ . . .	1.6	1.4	1.7	1.0			8.4
7½ " 8½ . . .	1.7	1.6	0.8	1.0			9.5	4.1
8½ " 9½ . . .	2.0	1.1	1.1	0.0		1.0	7.2	6.5
9½ " 10½ . . .	1.5	1.2	1.7	1.5		0.1	9.6	-1.3
10½ " 11½ . . .	1.5	1.4	0.5	0.5		2.3	9.5	7.7
11½ " 12½ . . .	2.3	1.7	1.7	0.1	1.0	1.2	7.7	6.3
12½ " 13½ . . .	2.4	2.7	1.0	1.9	5.7	3.5	8.6	11.3
13½ " 14½ . . .	3.2	1.9	1.1	0.6	2.8	3.2	12.8	6.4
14½ " 15½ . . .	4.4	2.0	4.6	1.2	6.0	4.1	23.0	5.4
15½ " 16½ . . .	4.4	1.8	3.3	.6	9.6	2.2	8.3	-3.2
16½ " 17½ . . .		0.1	3.3	.4	6.4	2.1	20.0	2.8
17½ " 18½ . . .			0.0	1.2	2.2	5.0	13.6	1.4
18½ " 19½ . . .			1.7	0.0	1.5	1.9	0.0	3.8

<sup>1</sup> Sensation et Mouvement.<sup>2</sup> Growth of St. Louis Children, Trans. Acad. Sch., St. Louis, March, 1893.<sup>3</sup> *Ibid.*<sup>4</sup> Report of Parliamentary Commission on Secondary Education, Vol. V, p. 363.



lifts of Roberts and Dr. Gilbert test fingers, wrist, elbow, and shoulder. They are therefore not safely comparable one with the other. I have arranged them, however, in parallel columns to show whatever parallelism there may be in additions of strength taken in a general sense.

It is clear from this table that strength varies from year to year in rhythms as we have observed in all other tests. The chief accelerations begin in boys from 13 to 14, and continue probably almost until 18 years. In girls the period of acceleration begins a year or so earlier, and, as a rule, begins to decline from 15 to 16; there seems to be a new acceleration after 18 years. From 6 to 10 or 11 years occur periods of gradual increase with very marked fluctuations. In order to determine the relative proportions of increase that occur in different periods I have calculated the following tables. The strength at 16 years has been taken as a base or 100 per cent. By subtraction the other columns are obtained.

TABLE F.

	Per cent. of 16-yr. strength acquired by 6 yrs.	Per cent. of 16-yr. strength acquired by 11 yrs.	Per cent. of 16-yr. strength acquired be- tween 6 and 11 yrs.	Per cent. of 16-yr. strength acquired be- tween 11 and 16 yrs.
<i>Boys.</i>				
Squeeze (Porter)	20	46	27	54
Wrist (Gilbert)	21	46	26	54
Arm (Gilbert)	24	64	22	44
Arm (Roberts)				36
<i>Girls.</i>				
Squeeze (Porter)	23	54	31	46
Wrist (Gilbert)	32	65	32	36
Arm (Gilbert)	32	67	23	45

From these calculations it would appear that in the case of boys only about a fifth of their 16-year-old strength is acquired before 6 years, a quarter from 6 to 11, and over one-half from 11 to 16, during the pubertal changes; in the case of the test upon the whole arm maturity is somewhat in advance. In the case of girls a greater share is acquired before 6 years, their strength acquirement is more rapid than with boys from 6 to 11 years, although the largest increment is added also during the pubertal flux.

These tests shed little light upon the question of the order of fundamental and accessory, since each of the tests largely involves fundamental movements exclusively. But in so far as the lift of the entire arm may perhaps be more exclusively fundamental than the combined movements of the wrist and hand alone, we see from the table that the arm movement seem to mature earlier than the wrist and hand.

Mr. L. W. Kline, in a statistical study of truant children,<sup>1</sup> finds that these children are significantly less developed, physically, on the average, than children of the public schools. He has kindly given me the data of dynamometer tests which he made, but did not use in his publication. These tests were made upon boys from 9 to 14, inclusive, in the Massachusetts truant schools. He also made identical tests upon a number of children attending the public schools of Worcester. While the number of children tested is not as large as desirable, nevertheless, a distinct cleavage is shown between the two classes, and goes to support the other evidences which indicate that hand strength, as well as motility, is in direct relation with the degree of mental development, or what is probably the same thing, strength depends to some extent upon the nerve centres of the higher levels. The following table compares the strengths of the truants and normal children :

TABLE G.

Age.	TRUANTS.		NORMAL.	
	No.	Mean Strength.	No.	Mean Strength.
9	19	23	69	26
10	20	25	83	30
11	30	30	102	38
12	31	36	121	40
13	47	40	102	46
14	23	51	90	53

Dr. Gilbert, in Iowa, segregated the "bright," "average" and "slow" children, according to their teacher's judgment. While in some tests, *e. g.*, rapidity of tapping, there was shown a distinct line of cleavage in favor of the bright children, yet in the tests of wrist and arm lift no cleavage is shown. Unfortunately, however, Dr. Gilbert combined the figures for both boys and girls in this comparison.

There is a fact of probable significance that the rate of increase in strength is high throughout the pubertal period, especially during the year in which the pubertal sexual changes chiefly occur, 14 to 15 in girls, and probably 15 to 16 in boys. In other tests there is generally a retardation during this particular period, the chief acceleration in height and weight occur before and after. The peculiarity is of significance in connection with a theory that has many supporters, that the seminal fluid has a direct effect upon strength. The relation is one which has been recognized from the time of the Greeks, who practically observed it in the training of their sol-

<sup>1</sup> *Pedagogical Seminary*, Jan., 1898.

diers and athletes. Bierent<sup>1</sup> has developed this law, and the facts these tables express are in agreement with his conclusions.

The literature of strength — increases after seventeen years, with which we shall not deal — is very voluminous. The investigations which have been made indicate conclusively that growth in this direction is by no means at maturity at the age mentioned. The English Anthropometric Committee concludes that the increase is rapid, and then more slowly until 30 years, after which it tends to decline with an increasing rate.<sup>2</sup> He finds a parallelism between the increases of weight and strength.

*Precision of Hand Movements.* Superficial investigation shows that the nervous mechanism involved in the attempts to be precise with the finger, require first an adjustment of a larger area of muscular and nervous tissues than those of any other movement of the body probably. Precision in drawing a fine line accurately, for example, requires steadiness not only of the finger movement itself, but of the hand, the whole arm, and even of the body. If we observe a child learning to write we find that he holds his breath, and in many cases his legs will be found bracing his body in intense strain. The central muscles of the arm and trunk are called into activity to give support of steadiness as a necessary condition for the fine adjustment to follow.<sup>3</sup> We may, therefore, perhaps consider precision as involving two processes: (1) that of steadiness of the central organization as a platform upon which rests (2) the finer nervous adjustments of the most complex nervous elements.

1. *Central Steadiness.* This phase of the problem has been subjected to investigation by Hancock<sup>4</sup> in the effort of children to stand still. The subject was asked to stand with feet close together and hands at side, to keep his attention on a distant object, and to try to remain still for a minute. By means of the ataxiagraph attached to a cap worn on the head the bodily swayings of the subject are automatically registered upon smoked paper.<sup>5</sup> The test was made upon 168 boys and girls of Worcester, 5 to 7 years of age. His tests show that during these two years the girls gained in steadiness 32 or 33 per cent.

<sup>1</sup> La Puberté.

<sup>2</sup> Report of Anthropometric Committee, p. 37.

<sup>3</sup> Compare Mercier: *Nervous System and Mind*, pp. 94-97. Also Féré, *Rev. Philos.*, Dec., 1897.

<sup>4</sup> Preliminary Study of Motor Ability, *Ped. Sem.*, Oct., 1894.

<sup>5</sup> The swaying in adults has been similarly tested by Bullard and Brackett, *Boston Medical and Surgical Journal*, Vol. I, p. 136, and Vol. II, p. 136; also Huisdale, *Am. Medical Journal*, Vol. XCIII, pp. 478-485

of the power of control at five years ; and the boys gained about 15 or 16 per cent. We may say, therefore, as the indication of Professor Hancock's study, that power of central control increases with age (very rapidly at the ages 5 to 7), and more rapidly in girls than in boys.

Mr. H. S. Curtis in a study of inhibition tested the ability of children of various ages in their ability to sit absolutely still. He concludes : "The ordinary child cannot sit still voluntarily. Children under five years do not on the average sit still more than 30 seconds and children from 5 to 10 years not more than one minute and one-half". Mr. Curtis explains this condition on practically the same ground offered in the paper, viz., that the higher centers of voluntary control are not developed in any degree of maturity until a late period of child life. He finds that mental occupation materially assists in the control of muscular restlessness and that these higher centers of brain action are not developed until a comparatively late period.

Johnson experimented upon feeble-minded children,<sup>1</sup> 7 boys and 5 girls, averaging 13 years, by the same method that Hancock used. He found the average swaying slightly greater at this age than Hancock found among the normal children of five years. The former were of a high grade intelligence for their class.

(2) *Peripheral Unsteadiness.* Corresponding to these larger swayings of the central movements, there are numerous small vibrations in the peripheral muscles involved in the adjustment for fine movements. Though these movements are imperceptible to ordinary observation, they are always experimentally demonstrable. In early infancy these movements are more noticeable in the form of apparently nervous twitchings that constantly occur in nearly every muscle of the body, even during sleep. As has been stated, these are perfectly normal and are signs of health ; they tend to disappear in conditions of lowered nutrition, and in idiot infants they are very much fewer or wholly absent.<sup>2</sup> As the infant grows older, they gradually grow fewer and less noticeable. The fact that they gradually tend to disappear may be explained on the ground that as the nervous and muscular mechanism is perfected, the lower mechanisms pass under control of higher brain levels.

Dr. E. H. Lindley<sup>3</sup> has made a study of the automatisms of early childhood and he shows the persistence of many of these earlier simpler forms into childhood and even into adolescence. Though in later childhood many of these simpler

<sup>1</sup> *Ped. Sem.*, Vol. III, p. 282.

<sup>2</sup> Hack Tuke's Dictionary of Psychological Medicine, p. 569.

<sup>3</sup> *Am. Jour. of Psychology*, July, 1896.

movements are combined to form rather complex automatisms, as Dr. Lindley illustrates, nevertheless a large number remain below the threshold of ordinary observation, indicating a more or less incomplete co-ordination of motor discharge, or storing of sensory impulses. Such co-ordinations clearly must interfere, as they are greater or less, with perfection of precision in fine finger movements requiring absolute steadiness. Dr. Lindley found that automatisms increase very perceptibly with fatigue, that they are most frequent in accessory muscles and, in general, decrease with age.

Professor Hancock<sup>1</sup> made an experimental test to determine quantitatively the unsteadiness of the shoulder, arm and hand, by means of the tremograph. He tested by this means 25 adult men, 62 boys and 34 girls from 5 to 7 years. The ability of the boys of 5 years was from one-tenth to one-fifth of that of the adults, and the ability of control improved about 50 per cent. from 5 to 7 years in the case of the boys and less for the girls. The girls possessed a much more mature control than boys of the same age.

(3) *Sensory Factors in Precision.* What has been said of these swaying tendencies of central and peripheral movements offers us evidence of the interfering factors which enter the problem of precision. A second series of conditioning factors in obtaining precision, lies in the sensory development. A movement is determined, the modern view of voluntary movement holds, by the sensory kinæsthetic impressions which are stored up in memory. A movement is made, at first accidentally we may say, and the sensory impressions from skin, joints, etc., which in consequence are stored in memory, are used in future discharges of motor impulses. Precision will depend upon their number and the accuracy of habitual adjustment between them and motor discharges. Clearly, as experimented facts show, exercise (*i. e.*, the frequency with which they are impressed upon the memory) will go far to determine motor precision.

The effects of exercise upon sensibility of skin is brought out clearly by Féré.<sup>2</sup> A subject more or less regularly practiced flexing his fingers singly, moving them in laterally and bringing them separately into opposition with the thumb. Sensibility before and after the experiment was tested by Block's instrument for finding the least pressure of a millimeter square that gives sensation. This test applied to the fleshy part of the thumb and finger tops showed that, on the right hand the thumb had gained 32 per cent. in sensation; the

<sup>1</sup> *Ibid.*

<sup>2</sup> *Rev. Philos.*, Dec., 1897.

index, 15 per cent. ; the middle finger, 10 per cent. ; the ring finger, 13 per cent. ; and the little finger, 6 per cent. ; on the left hand, the thumb gained 37 per cent. ; the index, 11 ; the middle, 7 ; ring, 5 ; and little finger, 8 per cent.

The development in accuracy of these kinæsthetic sensations with increasing age, has been neatly demonstrated by Dr. Gilbert in his Iowa study.<sup>1</sup> The subject was seated before a table upon which were two points 50.8 inches apart ; a pencil in his hand was placed at one end of the line. After carefully noting the distance, his eyes were blindfolded, and he was asked to move the pencil along the board and place it as near as possible upon the other point. Five trials were allowed each subject. Averages of these estimates from 50 subjects of each sex and for each age from 6 to 19, are as follows (the figures give in centimeters the averages for each age of the estimate of the distance, really 50.8 cm.) :

AGE,	6	7	8	9	10	11	12	13	14	15	16	17	18	19
Boys,	10.7	31.2	38.1	44.4	46.5	46.7	44.7	46.7	46.5	50.3	51.5	53.1	54.9	57.1
Girls,	12.7	20.3	29.7	31.8	38.9	46.5	41.1	43.2	48.3	46.7	51.1	51.0	52.1	51.5

The progressive development with age is clearly shown.

(4) *Growth in Precision.* Dr. Bryan,<sup>2</sup> with a somewhat elaborate mechanism, tested precision of finger movement as it occurs in executing the motions of writing. He used in the test some 600 or 700 boys and girls ranging in age from 6 to 16. He states in conclusion that, "the most obvious fact which appears is the great gain which is made between 6 and 8. Almost one-half the gain in precision made from 6 to 16, in both 'up' and 'down' writing movements, is acquired between 6 and 8 years. A second test to which Dr. Bryan subjected the same children was that of their ability, with a stylus, to strike a fixed point. An electrical apparatus recorded the approximations of error. The boys' right hand from 6 to 16 years gains in ability 60% ; the boys' left hand, 55% ; the girls' right hand, 56% ; the girls' left hand, 58%. The pubertal period seriously interferes with the growth in maturity and the chief gain is before puberty.

Professor Hancock<sup>3</sup> tested some 160 children, 5 to 7 years, in threading a needle, sitting still, holding arm horizontally, attempting to suppress twitching movements, tapping with the fingers in various orders, tying strings, etc. Mr. Hancock draws from them the following conclusions: (1) Children early learn to make movements involving large movements. They succeed easily in large movements of some degree of

<sup>1</sup> *Ibid.*

<sup>2</sup> *Ibid.*

<sup>3</sup> *Ibid.*

complexity. The order of development of control is, evidently, body, shoulder, arm, forearm and hand. In hand control the index finger differentiates before that of the others. (2) Fine and complicated movements are made with difficulty. (3) Children in normal healthy growth show a lack of co-ordination and control paralleled only by ataxic, choreic, and paralytic patients.

A test having a similar significance was used by Dr. Gilbert in his study of New Haven children. The subjects were given 10 weights, varying from 82 grammes to 100 grammes by steps of 2 grammes each, but indistinguishable in size. They were given the smallest weight as a standard, and asked to sort out the others which seemed to be of the same weight. The number of pupils tested was 50 for each year of age and sex, from 6 to 17. Dr. Gilbert thus summarizes: "The results show a gradual increase in ability to discriminate from the ages 6 to 13. After 13 there is a gradual falling off of 6.8 grammes (in discriminative precision), and then another gain till 17. Boys and girls, considered together, gradually increase in ability, but when they are considered separately, marked differences of sex appeared."

In the study, previously quoted, bearing upon characteristics of children who made "rapid," "normal" or "slow" progress in school grades under a system of promotion giving freedom to individuality, it is shown that 54 per cent. of the rapid pupils, 39 per cent. of the normal pupils, and 22 per cent. of the slow pupils are strikingly careful and accurate in their writing and drawing exercises; while on the other hand, 11 per cent. of the most rapid, 34 per cent. of the normal, and 59 per cent. of the slow pupils are strikingly careless and inaccurate. From the evidence of this study we must link accuracy on the whole with a maturer mental development as indicated by school progress.

We may sum up the matter of accuracy: (1) that as a primary condition which makes accuracy of hand and arm possible, the child must have a matured degree of control under direction of his higher level centers (*i. e.*, voluntary). The fact that this maturity is not reached, normally, until the ninth or tenth year, renders questionable the efforts of the school to compel accuracy such as is required by the kindergarten, and also by the primary school, in writing, weaving, etc. (2) That the ability to be accurate in hand and finger movements increases very materially during school ages; (3) that accuracy depends indirectly upon the development of the body as a whole, the steadiness of the trunk muscles being as essential as the accuracy of hand or finger movements themselves; (4) that for purposes of delicate peripheral movements,

as shown by ataxographic experiments, etc., the child has not a matured power of control until well into the school period, and long after severe school requirements of accuracy are demanded; (5) that the evidence goes to show that the sensory kinæsthetic sensations, essential in psychological theory, for definite voluntary movements are, in general, in a very immature state until eight to ten years; (6) that while the early years of school life are doubtless the period of nascency for finger and hand movements, nevertheless there is evident need of a clear realization of these physiological conditions on the part of teachers, not only intelligently to direct the training of these movements, but also to guard against unhygienic requirements; (7) that there are manifest dependent relations between general mental ability and power of accuracy of hand movements; (8) that steadiness of the trunk or central movements (fundamental) necessarily precedes ability to be accurate in peripheral (or accessory) movements.

In conclusion, some of the more general suggestions of this review may be restated briefly as follows: 1. The brain grows in its finer structures until a late period in life. There has been a failure to substantiate connection of differences in mentality with the differences in gross anatomy of the brain-shape of skull, weight of brain, form of convolutions, etc.

2. The order of development of the independent parts of the physical and nervous system is, as a general principle (subject doubtless to minor exceptions) from that which is oldest in racial history towards that which is most recent; that those portions which are oldest are most fixed, determined, and least capable of modification by present environment, and those which are relatively most recent are most plastic and subject to modification by education and environment. Among the important pedagogical inferences which follow from this principle, the following might be mentioned:

1. That, taking the activities independently, there is an early period in the development of each part or process, when the purpose of education must be to follow the fixed innate hereditary line of tendency, and to allow the racial instincts fullest play of development (fundamental education).

2. That there follows a later period, in an activity's development, when it passes partially out of the fixed control of racial habit, and becomes more plastic to present environment (accessory education).

3. That the order of logical connection of subject matter belongs, educationally, to the period of approximate maturity of an activity's development, and must not be introduced in



the earlier instinctive period, in conflict with strong evolutionary tendencies.

4. In an extremely loose sense, clearly recognizing the principle that the organism develops by parts, each of which has a different time of beginning its development, a different rate of ripening, and a different period of reaching maturity, nevertheless we may regard the period of infancy as one of predominating nascencies of the oldest fundamental activities largely in control of the lowest level of the nervous system ; the period of childhood from two years to puberty as the period of predominating nascencies of the special sense and their association one with the other : the period of adolescence as the period of predominating nascencies of the highest form of associations, *i. e.*, those which have been developed in the history of the human race.

5. The child's hand at the age of commencing school is relatively immature in power of rapidity of movement, strength and precision. Roughly it would seem that at the age of six the child has acquired only about 20 to 75 per cent. of the power at 16 years of age. It is clear that the period from 6 to 10 years is one of extreme nascency.

6. Deficiencies in the structure of the hand and in freedom of its movements are significantly frequent as accompaniments of deficiency in intelligence. The human hand in early childhood needs opportunity for the fullest possible development which in general proceeds from fundamental to accessory movements. This statement is consequently far from justifying many of the systems now employed in the schools which ignore the principle.<sup>1</sup>

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<sup>1</sup> The educational writings of Dr. E. N. Hartwell, particularly his report as Director of Physical Training in Boston schools for 1894, are of especial value on this problem. References to his articles will be found in Mr. Louis N. Wilson's Bibliography of Child Study, 1898.

## INHIBITION.

By H. S. CURTIS, Fellow in Psychology, Clark University.

It is feared by the writer that the title under which this article appears may prove deceptive ; so that those who would not be interested may be led to examine it, while those who might find in it something of interest will pass it by unheeded. Inhibition is used in its widest sense, in which it is nearly equivalent to natural selection. In the first section will be found a summary of the chief facts and theories of inhibition, psychological, biological and neurological. The second section aims to show the influence of one activity upon another and how it is exerted. The third section aims at a psychology of restlessness, especially in children. The fourth section shows the relations of the foregoing facts and conclusions to pedagogy.

If the standpoint seems materialistic at times, it is because we are dealing with the material side of the phenomena.

### HERBART.

For Herbart the whole story of psychology is the story of the struggle of concepts for the possession of consciousness.

The strong concepts drive out the weak ; "but as soon as the hinderance yields, the concept by its own effort will again make its appearance in consciousness." "When a sufficiency of opposition exists among concepts, the latter are in equilibrium." The laws of the movement and equilibrium of concepts can be calculated by mathematics. The first law is, "In the case of two concepts, one never entirely obscures the other." "In case several concepts strive together, the sum of arrest will be equal to the sum of the weaker members," etc. No concept which has ever been in consciousness is ever lost, but remains forever at its threshold, waiting to rush back to its old place. The mechanical threshold is the line which separates the conscious from the unconscious. Those concepts on the mechanical threshold, while "out of consciousness, are still effective therein." "But concepts on the statical threshold are in a state of complete suppression and cannot effect consciousness at all. If the concepts on the statical threshold acted in the same way as on the mechanical threshold, we should find ourselves in a state of the most intolerable uneasiness, or rather the body would be subjected to a condition

of tension that must in a few moments prove fatal. Even as under present conditions, a sudden fright will sometimes cause death; for all the concepts, which, we are accustomed to say, the memory preserves and which, as we all know, can, on the slightest occasion be reproduced, are in a state of incessant striving to rise; although the condition of consciousness is not at all affected by them." There are never more than three or four concepts at the mechanical threshold at once, while the number on the statical threshold may be infinite. The distance between the statical and mechanical threshold is represented by the subconscious modification a suppressed idea has to undergo before it actually enters into consciousness. The movements and struggles of concepts account for all mental phenomena. "Feeling and desiring are conditions and for the most part changeable conditions of concepts." "When a concept is driven forward and at the same time held back, it is the source of an unpleasant feeling." As often as the opposing concepts, which stand in the way of longing, attain preponderance, they produce a painful feeling of privation." "Pleasant feelings must be regarded as springing from the relation of many concepts, which do not arrest themselves individually, but rather which, perhaps for psychological reasons, cannot be perceived when separate." "This favoring (of concepts) is part of the process which takes place in consciousness, but in no way is it anything represented or conceived. Hence it can only be called a feeling—without doubt a pleasant feeling." "In general, it may be observed that feelings and desires have not their source in the process or act of conception in general, but always in certain particular concepts. Hence there may be at the same time many different feelings and desires and these may either agree or entirely disagree one with the other."

"The basis of the reason is the coincident operation of several complete series of concepts." "Will is effort accompanied by the idea of the attainability of the object of effort." "Freedom of the will is the assured supremacy of the strongest masses of ideas." Friendly concepts unite into apperception masses and resist the entrance into consciousness of concepts antagonistic to them. Sanity is the equilibrium of concepts.

Herbart's psychology contains three chief ideas; prevailing ideas are the content of consciousness; defeated ideas tend continually to return; the prevailing ideas tend to ally themselves with all friendly ideas, as men are united into nations or the aggregate of cells makes up the individual body.

In his metaphysics of substance, Herbart says: "But the contradictions contained in the conception of a thing with

several attributes forces us in order to free the conception of these contradictions, to complete the conception by the assumption of the existence of a plurality of real essences, each possessing an absolutely simple quality." Again, "There is no original internal change in what possesses being; hence it must be possible to explain change without the supposition of an original internal activity." The seeming changes are merely the self preservations of the reals. In his metaphysics of the ego, he says, "The soul is a simple essence, not merely without parts, but also without any kind of diversity or multiplicity of quality. It has no time relations. It has no innate natural talents, either for the purpose of receiving or for the purpose of producing. It is therefore no *tabula rosa* in the sense that impressions foreign to itself may be made upon it. It is not a substance which includes in itself original activity. It has originally neither concepts or feelings, nor desires. It has no predispositions to any of these. The simple nature of the soul is entirely unknown and will forever remain so." "The self preservations of the soul are concepts, and indeed simple concepts, for the act of self preservation is as simple as the essence, which is preserved."

I, for my part, can see no way of harmonizing Herbart's empirical and rational psychology; or how he can speak of an ego, which is a "simple essence," "without innate faculties or predispositions," totally unknown and unknowable, of which ideas are the "self preservations" (or reactions), and say also that "the content of consciousness is determined by the struggle of the concepts" and that "ideas rise by their *own force* from a state of complete suppression," etc. Concepts seem to be independent real beings, each one struggling for as large a share of consciousness as it can gain. His laws of the movement and equilibrium of concepts are only familiar laws of evolution in another form. When the concepts which repress a given concept decrease, the concept rises into consciousness, or into a fuller possession of consciousness; so, also, when the concepts, which favor a given concept, increase, this concept comes forward into greater prominence. Again, when the concepts which favor a given concept diminish, or concepts antagonistic to it increase, it sinks down to a lower level. These laws are identical with the laws for the equilibrium of the animal with its environment. When its enemies decrease, or when the conditions which favor it—as food water, etc., increase, the species becomes more numerous. Conversely, when its enemies increase or the conditions which favor it diminish, the species is reduced in numbers.

But, whether consistent or not, Herbart's empirical psychology certainly describes very well the actual events of con-

sciousness. We all know how the child forgets the old toy in the new ; and how new interests, loves, hopes, and fears are continually driving out their predecessors, and being in turn driven out by those which follow them. It emphasizes above all the economy of a monoideistic state of consciousness. Its interest for us is, that it shows a form of intellectual inhibition, which is practically equal to the "struggle for existence." It is inhibition by individuals rather than by central control.

Herbart's doctrine of apperception and his doctrine of interest, which depends on his doctrine of apperception and feeling together, have justly had great influence in modern pedagogy.

#### BENEKE.

The system of Beneke derives much from Herbart, and leaves out most of its inconsistencies. It is rather confusing at first, because it is hard to see just what he means by the original (psychic) power, on the stimulation of which all psychic products depend. Perhaps capacity of reaction of the nerve cell ; as of sight in the visual area, sound in the auditory, etc., would best describe these original powers. Every idea leaves a trace behind in the original powers, and when this is again stimulated either from within or without, the idea is brought again into consciousness. These traces he calls "formed primitive powers." Each faculty is only a summation of all the soul's acts of a particular kind, according to the law that "all products of a like kind attract each other, and as a consequence fuse into a whole." He says : "We give the name of understanding to the totality of concepts existing in the soul ; judgments to the totality of judgments ; inferential power to the totality of conclusions ; will to the totality of all ready formed acts of willing ; consequently the faculty of feeling is nothing more than the totality of all the feelings that arise in the soul, and are permanently existent in it." "The developed human soul is a product of simple original powers and of that which has affected them and been permanently retained by them." "For all our powers of sense, together with the products springing from them, form one intimately connected whole ; *they are the soul.*" It will be seen that Beneke has dropped Herbart's transcendental ego and made use of his doctrine of apperception to explain the faculties of the soul and the soul itself.

#### TAINE.

For Taine, as well as Herbart, all mental events are determined by the mutual struggle of ideas ; though Taine takes the further step of reducing all ideas to sensations, and showing us somewhat more definitely how this takes place. He says :

"The ordinary image, then, is not a single but a double fact. It is a spontaneous consecutive sensation, which, by conflicting with another sensation, primitive and not spontaneous, undergoes lessening restriction and correction. It comprises two momentary stages, a first, in which it seems localized and external, and a second, in which its situation and externality are lost. It is the result of a struggle, its tendency to appear external is opposed and overcome by the stronger and contradictory tendency of the sensation, occasioned at the same time by the action of the nerve. Under this effort it grows weak and thin, it is reduced to a shadow, we call it an image, phantasm, or appearance." "The mutual arrest, the reciprocal clash, the repression, produce by their combined effect an equilibrium. This equilibrium is a state of reasonable wakefulness. As soon as it is at an end by the hypertrophy or atrophy of an element we are mad, wholly or partially." Thus, "all circumstances, which suppress or diminish the corrective sensation, facilitate or provoke hallucination." And, "all circumstances, giving rise to or augmenting the corrective sensation destroy or weaken the hallucination. If we approach a person suffering under a hallucination of hearing, and speak to him so as to fix his attention, we can convince him that his pretended invisible interlocutors are silent while the conversation lasts." "Every image is possessed of an automatic force, and tends spontaneously to a particular state, to hallucinations, false recollections and other illusions of madness."

All the psychic life can be reduced to sensations. "All that observation detects in the thinking being are, in addition to sensations, images of various kinds, primitive or consecutive, indued with certain tendencies, and modified in their development by the concurrence or antagonism of other simultaneous or contiguous images." "Just as the living body is a polypus of mutually dependent cells, so the active mind is a polypus of mutually dependent sensations and images; and in the one case as in the other, unity is nothing more than a harmony and an effect. The ego is a mere abstraction; all, that is, is the individual sensation, idea, or image, which may occupy consciousness at the time. As Condilac has said, 'when I smell a rose, this sensation is all my ego.'"

Sensations may be still further reduced to molecular movements in the brain cells. There is no mental product without molecular movement. There is no molecular movement without some mental result, though this may be subconscious. Molecular movement and sensation are really the same thing, and the reason they do not seem so, is, because we see them from opposite sides.

The most important point in Taine's system is : that the ele-

ments of consciousness, sensations and images, if left to follow their inner tendencies, would make a pandemonium of the human mind. It is only through their mutual checks and repressions that sanity results.

#### ROUX.

Just as Herbart and Taine have sought to account for all psychic phenomena by the struggle of ideas, so Roux has sought to account for all physical phenomena by the struggle of the parts (*Kämpfe der Theile*). He thinks we do not need to suppose a special organizing principle, which builds the body after its own ideal; but just as evolution has gone upward to higher forms through the mutual antagonism of the organisms concerned, so the struggle of the molecules, cells and tissues determine the animal body. The battle is just as fierce and selection just as rigid between the cells of the same organism, as between different organisms in the external world. He begins with the molecules. Those are established which have the strongest power of attraction and assimilation, by which they get the start of the others and retain it. In the struggle of the cells, those cells which get started first, occupy the space the others would fill, and the strong take away the food from the weak, so that they are ultimately eliminated. Those cells which are most often stimulated to functional activity are over compensated for their waste, and are thus victorious in the struggle.

In the struggle of the tissues and organs we have the same process repeated. Even the form of the various organs is largely determined by their neighbor organs. If any one tissue should become so strong as to take all the nourishment, the organism must die. Health is the equilibrium in the struggle of the parts. The activity of any tissue is not due to its hyperemia, but its hyperemia is due to the increased assimilation of its cells, caused by the stimulus. The result of this is two fold, the increased nourishment and enlarged blood vessels of the part used, and the diminished nourishment and shrunken blood vessels of the parts unused. Through the activity of this inner struggle adaptation is carried down to the last molecule of structure; as parts which do not function atrophy and disappear from lack of stimulus. Roux sums up the results of his theory as follows: "Those cells or cell parts will be established, which are in the position to bring on functional adaptation, and this is the result of the struggle of the cells." "On the other hand the struggle of the different organs and tissues among themselves leads to the greatest possible utilization of the space in the organism; to inner harmony; to the perfection of the physiological significance of the parts to the

corresponding morphological significance." "Through this struggle a much more perfect adaptation to ends must be brought about, and much quicker, than according to the Darwinian principle of the selection of formal variations among individuals." This view presupposes the same conditions in the body as exist in the external world, namely, that there are germs of many more cells in the body than can possibly find place there and a consequent struggle for room; and that the amount of food is always limited, and the high nourishment of some means the low nourishment of others.

It is seen at once, that this is only another application of the general theory of evolution. It seems absurd to think that anything so definite as the bodily form should be determined by such seemingly chaotic forces. But on consideration we see that the result of the struggle is really predetermined by its conditions; as tissues must prevail in proportion as they are used. It will be seen that this question is at bottom the old question: is the animal body a unity, or is it a colony of cells? No one would claim that it is a unity in a strict sense, neither can any one claim that it is a mere aggregate of cells, such as we see in lower forms. So the question remains, how far has the process of unifying gone? How much of its liberty does the individual cell surrender to the cell community and in how far is it only a specialized member of a socialistic state, still retaining all its selfishness and simply bartering products for its own advantage?

Here we cannot refrain from following a little further the analogy between the individual and the race. Has not the course of the two been parallel in this as in other things? The savage is the single cell. Each individual is independent and unspecialized, absolutely selfish in his acts. With life in a herd or tribe the preservation of the aggregate becomes the important thing, in which the preservation of the individual is contained. The individual begins to form a consciousness of the whole and selfishness of the whole for preservation against its enemies. This process is still going on. Closer communication, better knowledge, and common interests are drawing men closer every year. Specialization is destroying their independence. Society is *becoming* an organism. With this organism must we not postulate a consciousness of the whole which would find its rude beginnings in the social instincts, and of whose higher development, perhaps, telepathy is a nascent faculty? The analogy would lead us to suppose that this process must increase until each individual becomes a ganglion cell in the brain of humanity and common sympathy and interests unite all. The law of love is the sure outcome of the law of evolution. If we glance back at the evolution



of the individual, must we not suppose the aggregate of cells became an organism in very much this way? First acting singly and independently, ultimately coming to act together and forming a common consciousness; in which the consciousness of the individual cell is lost, though it may be retained for itself.

In the vegetable world the "kämpfe der theile" seems to be yet more apparent. Each twig and leaf struggles for space and sunlight as best it can. The upper branches overshadow the lower and they dry up and drop off, just as unused members atrophy and disappear from the animal body. Each spring a twig starts from beneath the scar of each old leaf along the branch; but, if you look again after a year, you will find scarce one in a dozen has survived. Only those that have found or won space and sunlight are left. The length of the leaf stalk and size of the leaf are determined by their relations to the sunlight.

#### THE VAGUS.

Despite the immense amount of investigation to which the vagus has been subjected of late years, its function is still far from clear in details. I am aware of the hypothetical nature of much that follows. But there seems to be sufficient evidence for certain probable conclusions.

The ordinary phenomena, seen in the stimulation of the vagus are: that the heart is slowed or stopped after the first or second beat and held thus for a few seconds,<sup>1</sup> when it begins to beat again and beats more strongly than it did before stimulation. Of late, however, the most or all of this secondary augmentation has been referred to sympathetic fibres, bound up in the same sheath with the vagus. The action of the vagus varies greatly at different times. With many investigators you cannot tell whether the combined nerve (vagus and sympathetic) or the vagus alone was stimulated.

Gaskell has made very extensive contributions<sup>2</sup> to this subject, working chiefly on the frog and turtle. He holds that the vagus is the trophic nerve of the heart, its action resembling that of a stimulus, too weak to produce motor effects. Every modification of the beat, due to vagus stimulation, can

<sup>1</sup> It may last for a day or more in the turtle.

<sup>2</sup> *Journal of Physiology*, 1880-1, p. 48-75.  
 " " 1880-2, p. 369-379.  
 " " 1881-2, p. 199-203.  
 " " 1883 p. 43-127.  
 " " 1886 p. 451.  
 " " 1887 p. 404-415.  
*Brit. Med. Journal*, 1882 p. 572.

be paralleled by the action of a blood solution on an exhausted heart.

"If a salt solution be passed through the heart and afterwards a blood solution be sent into it under the same conditions of pressure as the salt solution, then it often happens, that as soon as the blood solution is seen to reach the heart or the ventricle of the heart, it stops still in the relaxed condition, sometimes for a considerable length of time and subsequently begins to beat again with an improved beat, due to the blood solution. In the same heart this experiment may be repeated again and again. In other hearts the sudden supply of nutrient matter does not cause any stoppage, but simply a gradual improvement in contractions."

Gaskell's earlier work was done on the combined nerve. But in his later contributions he still affirms the trophic function of the vagus.<sup>1</sup>

<sup>2</sup>Wesley Mills studied the acceleration of the heart in the slider terrapin, from section of the vagus. It may rise from 12 to 25 beats per minute, but depends on the condition of the heart at the time.

<sup>3</sup>McWilliams found similar results upon warm blooded animals. "After augmentations are slight and variable in character."

<sup>4</sup>Howell says the theory of the trophic action of the vagus has "commanded most attention" of recent years. These inhibitory impulses "may be discharged by the continuous stream of afferent impulses that constantly play upon them from the multitude of afferent nerves.

This later theory, the conception of a reflex tonus, is made probable by the observation, that section of the vagi does not increase the heart beat after the greater part of the afferent impulses have been cut off by section of the spinal cord near its junction with the bulb, and that the sudden decrease in the number of afferent impulses, caused by the section of the splanchnic nerves, quickens the pulse rate." Eichorst<sup>5</sup> and Zander found "that the death which results from the section of both vagi, is not entirely due to inanition, but partly to degenerative changes in the heart itself." They conclude: "The vagi exercise a trophic influence upon the heart."

Fontino cut a section a cm. in length from the left vagus of

<sup>1</sup>Journal of Physiology, 1887, VIII, p. 415.

<sup>2</sup>Journal of Physiology, 1885, VI, p. 246.

<sup>3</sup>Journal of Physiology, 1883, IV, p. 367.

<sup>4</sup>American Text Book of Phys., 1896.

<sup>5</sup>Die teophuchen Beziehungen der Nervi Vagi zum Hertzmuskel, Berlin, 1879. (I am not quite sure of this reference.)

a rabbit, after which he allowed the animal to live for several days. The animal seemed still in good health, and ate well, the other organs were found in good condition on being examined, but the heart was very much atrophied.

Ried Hunt has been one of the most fruitful laborers in the field of late. In his first<sup>1</sup> article he gives a very careful study of the results from stimulating the vagus and accelerator nerves separately and simultaneously. The section of the accelerators slowed the heart rate, their stimulation increased it. But the heart escaped from this acceleration more quickly than from vagus inhibition. When both nerves were stimulated together, the result was practically the algebraic sum of stimulating them separately. He worked upon the dog, cat and rabbit in his chief research, but found the same results in the crab. He found a slight after augmentation from the stimulation of the vagus alone in some cases. He inclines to the view that the accelerators are katabolic and the vagus trophic in function. <sup>2</sup>In two more recent studies by Ried Hunt and Harrington on the vagus of the opossum and the calf, they find the effect of the stimulation of the vagus of the opossum pronounced and long continued, with no after acceleration; though there was sometimes an increase in blood pressure. In the calf<sup>3</sup> there was an after acceleration in two cases.

<sup>4</sup>Harrington, in a study of the cardiac nerves of the guinea-pig, found that the blood pressure usually rose above normal after stimulation of the vagus, and that there was an occasional after acceleration.<sup>5</sup> But he thinks the efficiency of the heart was lessened, and questions the trophic function of the vagus.

It will be seen that our knowledge of the vagus is not yet altogether satisfactory. That it inhibits the heart seems certain, as its rhythm is accelerated on the section of the vagi, and retarded by their stimulation. That it has something to do with the nourishment of the heart seems very probable; inasmuch as the same stimulus will not repress the heart for long at a time, and there is often a secondary augmentation; sending a blood solution through the heart after a salt solution has the same effect; if the vagus is cut and the animal allowed to live the heart atrophies, although with the vagus intact the animal may be starved to death without this occurring. But it seems unreasonable to suppose that the heart alone should have a special apparatus for nourishing or inhibiting it, or that a nerve impulse should cause nutrition in one case and contrac-

<sup>1</sup> Jour. of Ex. Med., March, 1897.

<sup>2</sup> Jour. of Ex. Med., Vol. II, pp. 715 and 725.

<sup>3</sup> P. 725.

<sup>4</sup> Am. Jour. of Phys., Vol. I, No. 3, p. 339.

<sup>5</sup> P. 392, in the dog 389 (frequent).

tion in another. Still we know that the lungs and intestines also have nerves, whose actions resembles that of the vagus.

Is there not a good basis for the belief that every nerve stimulus is trophic? Wundt says every sensory stimulus first causes nutrition, and nutrition inhibits activity for a time. There seems to be good evidence also that nerve cells<sup>1</sup> and muscles<sup>2</sup> atrophy without their proper stimuli.

WUNDT. "Mechanik der Nerven."

This work of Wundt on the mechanics of the nerves does not seem to have received as much attention from neurologists as the eminence of its author and the great carefulness of his investigations deserve.

He has sought to reduce nerve phenomena to terms of physics and chemistry so far as possible. The nerve stimulus is the potent factor in nerve growth, activity, and inhibition of activity. The first effect of every stimulus is the nutrition of the cell. The nerve stimulus is turned into a growth force. By this means it is made latent in the fiber for about one two-hundredth of a second, and for a somewhat longer period in the cell. The albuminoids and fats are torn down, and the nerve molecules are built up to higher and higher complexity. These molecules are like a child's block tower, built up higher and higher until with the last block it all tumbles down, and the force, that was expended in building them up, is liberated in the force of their fall. Just as the fall of the pile driver liberates the force which was stored up in raising it—to use Dr. Hall's illustration. This process of building up compounds to greater complexity is the only way in which energy is stored in the nervous system, as the tearing down of complex molecules is the only way energy is set free. This process of storing up energy is going on continually, alike from perceptible and imperceptible stimuli. The process is slow or rapid, according to the intensity of these. As a result there is a constant tendency to build up these molecules higher than they can endure, and a consequent rhythmical overflow in muscular movements. But this surplus is constantly being "drained off to points of lower tension,"<sup>3</sup> and so "the equilibrium maintains itself." If this overflow is prevented in any way, the critical point may be reached by even minimal stimuli, and an explosive conduction takes place. Minimal stimuli carry on the activity of the heart and lungs by a summation process. Sensation is the mental equivalent for the resistance of the cen-

<sup>1</sup> Donaldson: *Am. Jour. of Psy.*, Vol. IV, p. 282. Growth of the Brain, p. 268.

<sup>2</sup> Stewart: *Manual of Phys.*, p. 546. Brain, Vol. LXXX, p. 536.

<sup>3</sup> Second part, pp. 141 and 142.

tral substance, by which stimuli are made latent. There is no real difference between sensory and motor cells, their difference of action depends on their relations to the nerve endings.

Wundt's system contains two very important principles: that the nerve stimulus is nutritive and inhibitive, and that nerve energy tends to equalize itself by overflow from points of higher to points of lower tension.

Setschenow<sup>1</sup> thought he had discovered the inhibitory mechanism for the spinal cord in the optic lobes.

Goltz,<sup>2</sup> after repeating the experiments of Setschenow concluded there were no inhibitory centers, but the entire brain and sensory nerves served this purpose. "The tonic activity of higher centers represses the activity of lower ones."

In as much as there are said to be no special inhibitory nerves the cells of the cord must be inhibited through the pyramidal fibers and sensory nerves that reach them. We have evidence of the constant influence of the brain over the cord,<sup>3</sup> in variation of reflexes, knee jerk,<sup>4</sup> secretions,<sup>5</sup> etc., with different emotional and intellectual states. If this means that minimal stimuli are constantly passing downward to the cells of the cord, we may expect this excitation to interfere more or less with other stimuli from the sensory nerves to the same cells. So, also, there may be a greater tendency for stimuli to pass up the cord,<sup>6</sup> when the brain is intact, and thus weaken the reflex stimulus.

It seems like a great waste of energy if nerve cells have to be restrained from action continually. But, if we accept the view that this restraint is only nutrition, this objection disappears.

## II.

In the pages which precede, I have treated in a historical way, the current theories and facts of inhibition. In the pages that follow I shall seek to show what is the effect of "the struggle of the parts" as applied to activities.

In general, activities repress one another; the store of energy at the command of the organism is always limited, and the using energy in one way must prevent its use in another.

Dr. Sargent<sup>7</sup> represents the amount of force expended by an average man weighing 150 pounds at 3,400 foot tons daily.

<sup>1</sup> Hemmungs Centren des Frosches.

<sup>2</sup> Beitrage zur Lehre von den Functionen der Nervencentren des Frosches, Berlin, 1869.

<sup>3</sup> Howell: Am. Text-book of Phys., p. 655.

<sup>4</sup> Lombard: *Am. Jour. Psychol.*, Vol. I, p. 5.

<sup>5</sup> Binet and Henri: *La Fatigue Intellectuelle*, p. 332.

<sup>6</sup> Setschenow: *Hemmungs Centren des Frosches*.

<sup>7</sup> *North American Review*, May, 1897.

He divides this expenditure among the various activities as follows :

Colorific work,	2,840 foot tons.
Internal (nervous and vital) work,	260 " "
External (muscular) work,	300 " "

If these estimates are correct, then several inferences may be drawn, if all these activities draw on a common store of energy. If we suppose the capacity of the individual for continuous work is 3,400 foot tons, the requiring of 400 tons in muscular work, instead of 300 tons, would only leave 3,000 tons for nervous and vital processes. Thus a demand upon any one of these activities beyond what nature is prepared to furnish by an increased nutrition, must be drawn from the others.

Let us see how well this supposition agrees with the facts. To begin with muscular work. There is a limit up to which increased exercise brings increased strength of the muscles concerned. The muscles increase in size and the bodily condition is improved, beyond this an increase of exercise diminishes the strength of the muscles and lowers the condition of the body. I am not aware that any one has given us the criteria for judging where this point is. But such a point must exist for every activity. In terms of force this would be the point where the energy consumed is greater than the energy produced. Up to this limit the stimulus of exercise is beneficial to muscles and nerve cells and causes them to produce a greater amount of force, beyond this limit it is injurious, the waste exceeds the repair and the general tone is lowered. Thus we come up everywhere against human limitations. Not he who works hardest achieves most, but he who works at his maximum of power, a point of great importance for every one to determine for himself. But sometime before the point is reached that the activity concerned is weakened, it begins to draw on the supplies of the other activities. Just as the heart and brain will starve the rest of the body and still be undiminished themselves, so it seems to be nature's law *that active parts shall be fed at the expense of inactive ones if necessary, or even at the expense of parts active in a lower degree.* Sargent says: "Porters, draymen, heavy iron workers, and a certain class of athletes often illustrate the effects of an excessive use of the muscular system. Where the body's nutriment is expended in this direction, the impairment of the heart and lung tissue is likely to follow."<sup>1</sup> Again, "It is possible to develop the muscular and nervous systems to the detriment of the

<sup>1</sup> North Am. Rev., May, 1897, pp. 558-561.

heart, lungs and digestive systems." I understand that the impairment of the heart and lungs is a common result of the overtraining of athletes.

When a child is growing very fast he is disinclined to exercise. Reversely, too much exercise will probably check growth. Starvation certainly will, and the excessive use of one would starve the other tissues. The small size of factory children is possibly a composite result of these two elements.<sup>1</sup>

But the effects on the brain are most disastrous of all. The children whom I have known to be set to work at seven or eight, and worked hard, have grown up very dull. "All work and no play makes Jack a dull boy." Scholar comes from *σκολή*. Intellectual workers are usually incapacitated for hard work by severe exercise.<sup>2</sup> It is a common experience of the students here, that, if they play three hard sets of tennis in the afternoon, they cannot work afterward. I often notice the full effects in myself. I fall back into automatism and habitual movements. On coming up to my room, I am apt to enter my old room across the hall, although I have not occupied it for nearly a year. On sitting down to write, I often dip my pen in the old empty ink bottle instead of the new one and date my letters in the last month. I often lie down and usually drop off to sleep almost at once. All of these are phenomena of suspended mental activity. The sound sleep of laboring men is one of the surest proofs that their work has drawn on the brain severely; for if the brain had been inactive during the day, its cells would be highly nourished and very excitable at night, so that sleep would be impossible. Mental activity certainly cannot account for much of this.

Mosso<sup>3</sup> gives many examples of the effect of physical fatigue on mental ability. He says he has climbed Mount Blanc several times, but he can remember nothing of the view from the summit. He has a friend who is a famous mountain climber, but he finds it necessary to write down his impressions as he goes along, for nearly everything has gone from his mind before he has completed the descent. He also mentions the case of a botanist who has taken a long trip into the country and obtained many interesting specimens, but finds himself unable to classify them until he has rested. Muscular work even in moderate amounts seems to diminish the rate of the tapping<sup>4</sup> and reduce the speed of mental calculations.<sup>5</sup>

The data is not at hand for making any very definite state-

<sup>1</sup> Burk: *Am. Jour. of Psy.*, Vol. IX, pp. 272-278.

<sup>2</sup> Spencer: *Education*, 269.

<sup>3</sup> *Die Ermüdung*, p. 201.

<sup>4</sup> *Am. Jour. of Psy.*, Vol. IV, p. 52. Dresslar.

<sup>5</sup> Binet and Henri: *La Fatigue Intellectuelle*, p. 278.

ments about the effects of increased heat requirements on the other activities. In general, the extra expenditure is nearly made up by an increased metabolism. But, if exactly the same amount and quality of food were eaten in winter as in summer, the organism certainly could not do as much work in winter. If breeders wish to produce a very small specimen of any species, they cause it to be born late in the fall and keep it in a cold place. Races, who live in polar regions, are often undersized and attain their growth and maturity later than people of warmer climes.

Intense cold produces an intellectual lethargy, complained of by arctic explorers. There is a tendency to go to sleep.

"Down has observed that in England, idiots lose in winter the few acquisitions they have been able to make in summer when there is least tax on their poorly nourished bodies."<sup>1</sup>

Sexual indulgences may check growth in the undeveloped.<sup>2</sup> It causes male animals to remain lean in the mating season. It causes a physical weakening so that athletes are usually forbidden intercourse with their wives during training. Excesses may lead to derangement<sup>3</sup> or if very great to imbecility.

Woman<sup>4</sup> has such severe drains upon her energy through the menstrual flow and child nourishment that in physical and intellectual achievement she has ever been the inferior of man. She may not be inferior in capacity, but she is in ability to endure protracted labors.

The effect of excessive brain activity is most disastrous of all. Spencer says<sup>5</sup> the present race of Englishmen are inferior to their fathers in height, weight and resistance to disease. He thinks the overwork of the school children is the cause. He says this belief has been thrust upon him by observing the constant physical break-downs in over-pressure schools. For every one that breaks down, there must be at least half a dozen injured, he thinks.

Mitchell,<sup>6</sup> after commenting on the sad state of health of the American girl, lays the blame to the schools. He says: "I firmly believe, and I am not alone in this opinion, that as concerns the physical future of women, they would do far better if the brain were very lightly tasked, and the school hours but three or four a day until they reach the age of 17 at least."

<sup>1</sup> Donaldson: *Growth of Brain*, p. 296.

<sup>2</sup> Dr. Hall: *Adolescence*.

<sup>3</sup> Dr. Hall: *Adolescence*.

<sup>4</sup> Havelock Ellis: *Man and woman*, pp. 256-257. Curves on page 249. See also *Ped. Sem.*, Vol. III, pp. 468-482.

<sup>5</sup> Education, p. 260.

<sup>6</sup> Wear and Tear. Compare, also, Rankin *Hygiene of Childhood*, p. 115.



There is a good deal of more or less experimental evidence to show the influence of brain activity on the various bodily and vital functions.

That growth may be checked is difficult of proof. Still it appears that children grow faster during the summer vacation.<sup>1</sup> On this point European statistics seem to be agreed.

Binet and Henry, after careful study of the boarding schools of France, conclude the weight of the children may be actually diminished by excessive brain work.<sup>2</sup>

Mosso,<sup>3</sup> after speaking of how the other tissues are consumed to supply the heart and brain in death by starvation, and the effect of severe brain work on the strength of the muscles, says: "And therefore I hold it for probable, that not only by starving, but also by exhausting the brain by excessive work, the muscles may give up a part of their albuminoids to the blood currents to be carried to the brain." I notice in my own case that I grow lean when I am working hard, and begin to gain flesh with a vacation.

Mosso<sup>4</sup> and Binet<sup>5</sup> both found that a brief period of intellectual activity increased physical strength, but a long period reduced it. Dr. Maggiora<sup>6</sup> tested the strength of the middle finger of his right hand on the ergograph in the morning, 40 contractions, amounting to 5,694 kilogrammeters. At 5.15, after examining 19 candidates, he could only make 11 contractions, amounting to 1,086 kilogrammeters. Mosso says: "The tiring the brain diminishes the strength of the muscle." "The requirement for rest after a period of severe mental work rests on the fact that the nerve centers are depleted and the muscles are weak."

Binet and Henri<sup>7</sup> found that hard mental work began to reduce the rate of respiration after 15 minutes, and of the heart beat after half an hour. Spencer<sup>8</sup> says this result may become permanent as the result of overwork.

There seems to be a general agreement that dyspepsia<sup>9</sup> may be caused by excessive brain work, and the resistance to disease lowered. I find that I have to be more careful when I am working very hard.

<sup>1</sup> Vahl, Malling Hansen and Schmidt Monard, as quoted in *La Fatigue Intellectuelle*. Binet and Henri, 1898, p. 221.

<sup>2</sup> *La Fatigue Intellectuelle*, p. 224.

<sup>3</sup> *Die Ermüdung*, p. 285.

<sup>4</sup> *Die Ermüdung*, pp. 278-280.

<sup>5</sup> *La Fatigue Intellectuelle*, p. 167; résumé, p. 195.

<sup>6</sup> *Die Ermüdung*.

<sup>7</sup> *La Fatigue Intellectuelle*, p. 332.

<sup>8</sup> *Education*, p. 274.

<sup>9</sup> Spencer: *Education*, p. 274; Sargent: *N. A. Rev.*, May, '97, pp. 558 and 559; Cowles: *Neurasthenia*, p. 52.

Inasmuch as the function of sleep is mainly brain rest, we may expect the same results from loss of sleep as from excessive brain work. Rankin says: "Insufficient amount of sleep (in children) often results in smallness of stature, stunted growth, and in insanity in later years." Again: "The symptoms resulting from too little sleep are nervous irritability, restlessness, loss of flesh, and a delicacy of digestion."

In experiments carried on in Italy it was found that dogs could be kept without food for 20 days, and lose more than half their original weight and still survive; but loss of sleep for four or five days proved fatal. The temperature fell as much as 8° below the normal at the last.<sup>1</sup> If a hibernating animal wakes up too soon it is apt to starve to death.

In what we have said thus far we have spoken as though the energy for all the activities was drawn from a common reservoir, into which exactly the same amount was poured each day; so that any excess of use in one direction meant a deficiency in some other direction. We have seen that these suppositions agreed fairly well with the facts. Still the case is by no means so simple as this. All activities increase the metabolism so as to compensate for the extra work up to a certain limit, or even over compensate it. Beyer<sup>2</sup> has shown from the measurement of naval cadets that the height may be increased one inch, and weight 50 to 60 pounds, by systematic exercise, during the years from 16 to 20. Years in which gymnastics were taken being compared with years in which they were not taken.

We must not confuse the ultimate and immediate effects of any activity, however. Severe physical exercise may incapacitate us for mental work in the evening, but be of great assistance the next day. So long as an increased expenditure is compensated by an increased supply the use of one activity may *ultimately* strengthen all the others.

How then does one activity influence another? There are at least four important ways: First, the toxic products of the waste of muscle or brain are constantly cast into the circulation, whereby all parts are affected. "If<sup>3</sup> the muscle vein is tied and the waste products ordinarily drained off are kept within the muscle, its irritability is lowered. It may be brought again into healthy action, by furnishing it a fresh supply of healthy blood, by washing<sup>4</sup> out the waste materials, or allowing it to rest." Mosso<sup>5</sup> found that if the blood or pul-

<sup>1</sup> Manaccene: Archiv Italien de Biolog., XXI, '94. Quoted in *Revue Scientifique*.

<sup>2</sup> Jour. of Ex. Med., Vol. I, p. 546.

<sup>3</sup> Taine: Phys. Education.

<sup>4</sup> Donaldson: Growth of Brain, p. 311.

<sup>5</sup> Mosso: Die Ermüdung, p. 119; Cowles: Neurasthenia, pp. 36 and 38.

verized muscle of a fatigued dog were injected into a normal dog the normal showed all the symptoms of fatigue.

<sup>1</sup> Similar waste products are probably produced in a fatigued brain.

Secondly, the continued activity of one organ causes dilatation of its blood vessels. This means a diminution in the blood supply to other parts. The food materials are extracted from the blood more actively by functioning parts, and as a result it is poorer in food materials for other organs.

Thirdly, useful materials may be actually taken from resting parts to feed functioning ones, as Mosso<sup>2</sup> has said. He instances the migration of the salmon up the Rhine. It does not eat, but the main mass of the fish is made over into roe on the journey. The wasting of the tissues in starvation is another example of this. This effect would be noticed only when the demand on a tissue exceeded its food supply.

Fourthly, the motor areas for setting off all the activities may be connected so that the exhaustion of one may weaken the others. Probably these factors enter into different states of fatigue in varying degrees.

In every muscular movement there are three factors involved: the muscle, the nerve, and the nerve cell. It seems to be well established that the nerve<sup>3</sup> itself does not tire, but the muscle or nerve cell may be fatigued. To this fatigue there are two elements: that due to loss of energy,<sup>4</sup> and that due to clogging by waste products. As a rule the nerve cell seems to fatigue<sup>5</sup> first; as a muscle, which can no longer be contracted voluntarily still responds for some time to the electrical stimulation. The importance of the nerve cell to physical strength is much underrated in most estimates. If the nerve cell is injured the muscle lies inert, and soon atrophies.<sup>6</sup> Now I raise a feather in my hand, and now I raise a hundred pounds. What makes the difference in the tension of the muscles? It can only be caused by the strength of the impulse the muscle receives.

A man in fright or delirium<sup>7</sup> may exert twice his usual strength. I have noticed that in exhibitions I can sometimes draw myself up on the bar with one hand, which I cannot do at all at other times. We cannot well suppose that the *muscles* are stronger at such times. It has been shown that students<sup>8</sup>

<sup>1</sup> Donaldson: Growth of Brain, p. 313.

<sup>2</sup> Mosso: Die Ermüdung, p. 283.

<sup>3</sup> The nerve plate may be fatigued.

<sup>4</sup> Hodge: Jour. Morph., Vol. VII, p. 95; Stewart: M. Phys., p. 542.

<sup>5</sup> Donaldson: Growth of the Brain, pp. 312 and 322.

<sup>6</sup> Stewart: Manual of Phys., p. 546.

<sup>7</sup> La Fatigue Intellectuelle, p. 181.

<sup>8</sup> Tests at the Yale Laboratory.

have a stronger hand clasp than laboring men; although they have probably done very little to develop it. It is also well known that the strength varies with various conditions. As has been abundantly shown any sensory stimulus may greatly augment the knee<sup>1</sup> jerk or the pressure on the dynamometer,<sup>2</sup> if it occurs at the right time. General cerebral excitement profoundly influences all these. The <sup>3</sup>knee jerk, rapidity of tapping,<sup>4</sup> and power<sup>5</sup> of clasp are all increased by brief intellectual activity. But intellectual fatigue again reduces them below the normal. In a series of experiments, which I carried on last year, strength seemed to be in a very close relation to mental excitement. Normally I could press from 115 to 120 pounds. But on one occasion, after working for an hour and a half on my thesis and getting very much interested, the average ran up to 127,<sup>6</sup> with 132 as the highest contraction. As similar results were obtained by Binet and Henri, I refer to them instead of treating more of my own results. These facts show the close dependence of physical strength upon brain states. Another set of facts prove that more than the motor area directly concerned are drafted in at any rate.

The rate of tapping<sup>7</sup> and strength of clasp<sup>8</sup> of one hand is reduced by tiring the other previously. Each hand has greater endurance, when worked alone. When both hands are contracted together,<sup>9</sup> the left hand is stronger and the right not so strong as usual. Both hands share the gains from the practice<sup>10</sup> of one. The hemispheres are approximately equal in size and weight,<sup>11</sup> although we use our left hemisphere very much more. Physical strength is reduced but endurance increased by hard brain<sup>12</sup> work at the same time. I can see no satisfactory explanation of these facts but the transference of energy from one part of the brain to another. It is unfortunate that no one has tried to see if tiring the leg would not have a similar effect upon the strength of the hand. But we do know that a

<sup>1</sup> Lombard: *Am. Jour. of Psy.*, Vol. I, p. 49.

<sup>2</sup> Féré: Quoted by Jones, *Psychol.*, Vol. II, p. 379; Binet and Henri: *La Fatigue Intellectuelle*, p. 181; Cleghorn: *Am. Jour. of Physiology*, Vol. I, No. 3, p. 339.

<sup>3</sup> Lombard: *Am. Jour. of Psy.*, Vol. I, pp. 52 and 53.

<sup>4</sup> Dresslar: *Am. Jour. of Psy.*, Vol. IV, p. 521.

<sup>5</sup> Binet and Henri: *La Fatigue Intellectuelle*, p. 181; Mosso: *Die Ermüdung*; Lancaster experiments at Clark University.

<sup>6</sup> Five tests.

<sup>7</sup> William Brian: *Am. Jour. of Psy.*, Vol. V, p. 198.

<sup>8</sup> *Proceed. of Col. of Phys.*, Philadelphia.

<sup>9</sup> Binet and Henri: *La Fatigue Intellectuelle*, p. 181.

Jeannette Welch: *Am. Jour. of Phys.*, Vol. I, No. 3, p. 286.

<sup>10</sup> Dresslar: *Am. Jour. of Psy.*, Vol. IV, p. 201.

<sup>11</sup> Donaldson: *Growth of Brain*, 275.

<sup>12</sup> Jeannette Welch: *Am. Jour. of Phys.*, Vol. I, No. 3, pp. 291-299.

vigorous walk reduces the rate of tapping and of mental calculations.<sup>1</sup> When we add to these considerations the results of the ergographic tests of Mosso and others, it becomes certain that the use of one part of the brain may weaken or strengthen the action of other parts according to the length of time it is carried on. Into many of these cases the problem of toxic products does not enter; as the increase in rate and strength of clasp, due to mental activity; as also the increase in strength of left hand, when the right is contracted simultaneously. Let us analyze the simplest of these cases, the exhaustion of one hand or finger by working another. The part involved is so small and the exhaustion may be so speedy, that we cannot well refer the effect on the other hand or finger to toxic products. The lessening of the blood supply or destruction of the tissues of the other hand is not worth considering in this connection. Still it may be said the two hands work together and we actually contract the other hand and hence use both its muscles and its nerve centers. This is true to some extent, but it would scarcely amount to a "warming up," not more at any rate, and hence should increase the muscular power. The only conclusion left seems to be that the nerve centers of one hand were weakened by using the other hand. The motor area for a muscle is the point where the stimuli for that muscle leave the cortex, but it is not necessarily the place where they are generated.

Those who would explain muscular fatigue by mental work, by saying we think with our muscles, must take into account the experiment of MacDougal,<sup>2</sup> who found the finger was relaxed during mental effort, and Binet and Henri<sup>3</sup> who found the muscles of the eye in a similar condition. This theory cannot well account for any increase of strength due to mental activity.

There is plenty of direct evidence for discharges from one brain area to another. Stimuli<sup>4</sup> to a single sense stimulate the entire brain. All sensory and motor areas are under voluntary control. This can only mean discharges from the association areas upon the areas concerned. If this were continuous, there would be mental exhaustion from muscular work. Perhaps this is the explanation of the mental heaviness of laborers. In case of intense mental work the current *may* set in

<sup>1</sup> Binet and Henri: *La Fatigue Intellectuelle*, p. 278.

Dresslar: *Am. Jour. of Psy.*, Vol. IV, p. 52.

<sup>2</sup> *Psychological Rev.*, March, 1896, p. 158.

<sup>3</sup> *La Fatigue Intellectuelle*, pp. 170-171.

<sup>4</sup> Donaldson: *Growth of Brain*, p. 283.

Sensory stimuli increase strength.

the other direction. Motor areas would discharge upon the associational areas and the muscles would be weakened.<sup>1</sup>

More than two-thirds<sup>2</sup> of the entire mass of the brain is made up of fibres, and of these, by far the larger part are associational. These would be meaningless if discharges could not take place over them. Whenever a discharge takes place there is a transference of force. If one area could not assist another, we might expect its degeneration to follow the loss of its appropriate organ. This, however, does not occur except in case of a very young child. The blind do not have visual dreams if they become blind before five or six.<sup>3</sup> If associations become established with other areas, the visual seems to be retained. Donaldson thinks even the undeveloped cells in Laura Bridgman's brain must have taken some part in the general activity.<sup>4</sup>

Negatively : If each motor center must discharge separately, and there is a general tendency for nerve cells to build up continually beyond the point of equilibrium, then we must use each motor area regularly or it will discharge spontaneously, and thus continually disturb the process of thought. With the purpose of investigating whether or not such a tendency actually existed, a plaster cast was placed on the hand, so as to prevent any motion of the hand or fingers, and kept there for about 90 hours.

The evidence, so far as it goes, both in my case and that of another university student, on whom it was tried for 19 hours, is all in the negative. Very few motions were noticed and a reason could be found for nearly all of these. In my own case, on removing the cast, the pressure on the dynamometer was less than usual and the reaction time was three times as long 389  $\sigma$ . The hand did not seem stiff after the first few contractions. This would seem to indicate that motor paths were becoming impermeable. Would this not indicate that the energy of the hand area had been used in some other way? We may suppose that here we have exactly the process by which an organ becomes rudimentary. It is not used for a long period, as the result its motor center is raised to a point of high tension. After a time the point is reached where it must overflow on other areas ; these paths become well established and this center is added to its neighboring centers, while old paths become impermeable from lack of use.

The cast served as a delicate register of minimal move-

<sup>1</sup> Mosso: Die Ermüdung.

<sup>2</sup> Donaldson: Growth of the Brain, p. 170.

<sup>3</sup> Jastrow: Visual dreams of the Blind, V. Princeton Rev., Jan., 1888.

Donaldson: *Am. Jour. of Psy.*, Vol. IV, p. 291.

<sup>4</sup> Donaldson: *Am. Jour. of Psy.*, Vol. IV, p. 291.

ments. The motor tendency of ideas was often quite manifest. Very often on reading the word contraction, or thinking of some motion, the tendency to move was recorded in a slight pressure against the cast.

In opposition to the facts heretofore cited, it must be said that, if it were strictly true that one activity could draw on all the brain energy, we could not tire our little finger until the finger muscle or the entire cerebrum were exhausted.

If the process of evolution has been from a homogeneous aggregate to a differentiated individual, we may expect that there was a time when each cell had to discharge separately and for its own ends. If the body ever becomes completely unified, we may expect the energy of each cell will be at the command of the body as a whole and can be used for *any* activity. The question is, where between these two extremes is man to-day; or rather, where is each individual man, for different men have doubtless stopped at very different stages on this journey, and the child has not gone as far as the man. The first connections we may suppose were among the different cells of the same area. The child is practically in this stage at birth. Nature has provided for the general education of the small child by requiring him to use each store of energy for its own proper activity. If he does not use each area, its energy accumulates and he becomes restless and even nervous. Rest for him consists absolutely in a change of work. With advancing age each area becomes more and more perfectly connected with other areas; but nerve paths like dry streams become choked up and offer a considerable resistance to the passage of the nerve impulse; as a result, the tension may be quite different in different areas, but the limit to this difference is the permeability of the nerve fibre. When this connection is once established, one area may exhaust another area to a certain extent, but never to its own level. If a person used to taking vigorous exercise suddenly stops, he will feel restless at first, but later will not mind it. This probably means that the connections between this area and others have been opened. In thus allowing one area to draw on another, nature has provided for specialization with advancing years. The more completely the brain is unified, the less will a man suffer from specialization. And on the other hand, perhaps, specialization and thus connecting all areas and interests with one area and interest is the only way to unify the brain.

It may be objected in opposition to these facts that localization becomes more definite as we go up the scale of life. It is true that each activity gains its cerebral station; but connections between the stations become more numerous. The doctrine of the partial unity of the brain force seems to me the

*necessary* neurological correlate of the psychological *fact* of association.

By permission of Dr. Lancaster I give a brief summary of his ergographic tests on "warming up." A weight of 700 grammes was used. Complete exhaustion soon resulted, so that the finger could not be moved. After a five minute intermission, in which the finger was contracted at intervals without the weight, a second curve was taken. Exhaustion usually resulted within a quarter of a revolution<sup>1</sup> in the first curve; but the second might be carried several times around the drum, and the weight could be increased from 700 to 1,000 grammes. Mental work served also to bring on this second curve. After exhaustion was reached in the first curve the muscle still responded as readily as ever to electrical stimulation of the nerve. This would seem to show that the fatigue must be in the nerve cells. How shall we account for this sudden recuperation with great gain of power? Dr. Lancaster's explanation is, that in the first curve only the motor areas of the finger are used, while in the second, neighboring areas have been drafted in. There is a "warming up" or second breath<sup>2</sup> for every activity, and in this second period there is usually a great increase of power.

If we accept Wundt's dictum that nerve cells tend constantly to discharge from points of higher to points of lower tension, we would have a simple explanation of this. Any used area becoming exhausted would cause currents toward it from adjacent areas, and a consequent establishment of paths connecting it with other areas. To use a simple analogy we have a chain of reservoirs with obscure connections between them, in all of which the water stands at nearly the same height. If now one of these reservoirs is drawn off, the water pressure will re-establish the connections, and the water will flow from the various reservoirs until it again stands at nearly the same height in all. The height will not be exactly the same because it will require a certain amount of pressure to force the water through the obstructions. Suppose now the attempt is made to drain off the first reservoir again, the connections with the others are established, and it can be drained only by draining the whole system. Thus, if any area is in constant use its connections with other areas will be kept open, and its endurance will be very great, while an area which is but little used cannot draw on other areas easily, and will be soon exhausted. In terms of mind this would mean we can attend for a long

<sup>1</sup> Contractions every one or two seconds.

<sup>2</sup> Partridge: "Second Breath," *Ped. Sem.*, Vol. III, p. 372. See also Lombard, "Muscular Contraction," *Am. Jour. of Psy.*, Vol. III, p. 27.



time to a subject on which we have worked much and intensely, and only a short time to a new subject. This would seem to offer an explanation in neurological terms of specialization. One part of the brain, being worked constantly, draws on all the other areas until, we may suppose, in a well organized brain all the areas become associated with this one and discharge upon it, which thus uses the energy of the whole. It is the purpose of education to establish as many of these connections as possible, to unify the brain. If Wundt's principle is true, then we might expect the gravity toward any area to be in proportion to the completeness of its exhaustion: in other words, the way to master any subject and unify the the brain is by intense effort, for by this means other areas will be drafted in, associations will be formed with other interests and other knowledge.

In consideration of the facts heretofore stated, what should be the attitude of the student toward exercise? Is not the lean, hollow-chested student of the middle ages with his hatred of physical exertion the ideal to which we must return? Far from it. While severe physical exercise detracts for the time being from mental ability; in developing the motor areas, it ultimately places a larger store of energy at the command of the brain. As it seems to me the energy for any brain activity is mainly drawn from these motor areas. You find men of great mental ability who are physically weak, but you will not find many men of great mental *endurance*<sup>1</sup> who are so. I believe that, that energy which will carry a man through long hours of severe mental toil, which endures alike griefs and excitements and worries, is seldom found without a good physique.

The bearing of these facts on education seems to me plain. In the child the different areas are very poorly connected, hence we cannot use all through one, we must use each activity, and develop every interest, that we may have a larger store of energy for the brain to use later. Let all of the senses be trained, let each motor area be employed. In adult life let a man specialize and unify his brain so he can use all these stores of energy for any purpose.

#### PRECEPTS.

Give the mind over as completely as possible to one idea, lest of several ideas one inhibit the other and your energy be wasted.

A new worry or a new fear will drive out an old one. Two

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<sup>1</sup>Sargent: North Am. Rev., May, 1897, p. 562; McLean, Phy. Education.

are not as strong as one. If one gets too strong find it a companion.

There is great danger that the intellect will crush out the emotions. Every worthy activity of the soul should have some period of time wholly to itself. Vices may be starved out by giving their store of energy to other activities. Put a harmless pleasure in place of an evil one, but do not take one away and put nothing in its place. "Nature abhors a vacuum." Put athletics and adventure in place of sexual indulgence.

The country youth has fewer temptations than the city youth, but he has also fewer things to divert his attention from those he does have. A new game, a new toy, a new hate, a new love, a new friend, a new enemy, will each abolish or lessen the importance of the old one.

The most exciting novel has its uses. When we find ideas pressing upon us, which we would not entertain, but cannot set aside, this is the easiest way to get rid of them.

Do not bother about your wrongs! Find something else equally as interesting to think about! X

#### SUMMARY.

The amount of energy which can be developed by any organism is limited. Up to a certain point exercise causes a muscle to increase in strength, beyond this it is weakened. But this point is only reached when all available supplies are no longer sufficient to repair its waste. Long before this point is reached it begins to draw on the other activities. Active parts are fed at the expense of resting ones.

Excessive physical exercise may stunt growth, reduce the flesh and strength, impair the heart and lungs, and dwarf the intelligence, or impair its efficiency for the time being. Where great drains are made on the energy to maintain bodily heat, as in polar regions, maturity is attained later and intelligence is often deficient. By excessive brain work growth may be checked, weight reduced, muscular strength lessened, the heart beat slowed, and dyspepsia and a physical break down brought on.

One activity may inhibit another; 1. By poisoning the blood with its waste products; 2. By robbing the blood of its nourishment; 3. By consuming the resting parts; 4. By using its brain area.

The nerve cell is as important as the muscle to muscular strength. Different brain areas are connected by associational fibers. These must imply discharges from one to the other and hence a transference of energy. If one area could not assist another, its degeneration would follow the loss of its appropriate organ. This does not occur unless the loss comes very early in

life. The hand can be kept inactive without the hand area's discharging spontaneously. The brain is on the way to unity not yet entirely reached, connections are very poor in the child. "Second breath," or "warming up," means the drafting in of other areas to assist the primary activity. Constant use tends to associate the area used with other areas. Intense effort tends to unify the brain. The brain owes most of its endurance of mental toil to its motor areas. Develop each area and interest in childhood and use the energy of all in a single activity in manhood

### III.

#### RESTLESSNESS.

Restlessness is a phenomenon easy to observe, but hard to explain. It is movement without any apparent cause or purpose, resulting seemingly from some inner physiological necessity. Children are very restless, a quality which is shared by the young of all animals as well. It is the root from which the play impulse springs, a surplus of energy requiring employment. As the young animal grows to maturity and requires all his energy to secure his living, play disappears. But, whenever food is provided and the struggle for existence is made easy, a surplus again accumulates and manifests itself in a vague uneasiness. Notice, for instance, the restlessness of caged animals, the runaway spirit of a horse that has been long in his stall, the effusive joy of a dog at the prospect of a hunt, and the wanderings of all our domestic animals. If the ends of life for an animal are food and shelter, we might suppose, that these being attained, no effort would be made. But this is not the case; an animal which is fed all it can eat and in considerable variety will still wander; though it seems as if this instinct were beginning to die out. I have watched the movements of fattening hogs for hours. An over fed hog will wander aimlessly about his lot, lying down every few rods, only to get up and wander on again. But an old hog is not nearly so restless as a small pig. Confinement and an easy life are reducing his natural activity. Birds are very restless, almost nervous in their movements. In watching sparrows in a tree before my window with a stop-watch in hand, I have often seen them turn their heads or make other movements up to the number of 60 or 70 times a minute.

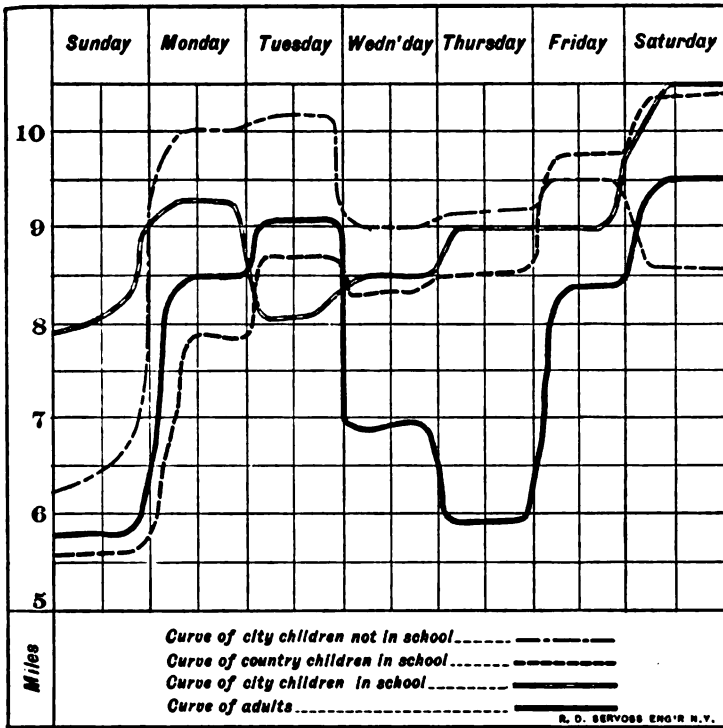
But any one who observes children must very soon perceive that they differ greatly in activity, from their earliest years. In the hope of securing a more accurate measure of this, I secured four American pedometers and put them on adults and children of various ages, and asked some responsible person to

keep record of the day's activity every night for a week. The results were not as satisfactory as might have been hoped, as the pedometers were not very reliable and had to be regulated every week or two to keep them running together. The records given are not really accurate for miles, as the pedometers were all set to a 20 inch step, this of course would be too long for a small child<sup>1</sup> and too short for a man, being about an average step for a woman of medium height. This, however, shows the number of steps each person took in a day, or the real activity which was the thing desired. This means 2,754 steps for every mile represented in the record.

The following is of city children not in school.					Country children in school.				
	Sat.	Sun.	Mon.	Ave.		Sat.	Sun.	Mon.	Ave.
M. 6	11½	3¼	7¼	10¾	M. 11	9½	3¼	7½	7¾
M. 2	9½	6¾	9½	8½	M. 13	10½	6¼	10¼	9¾
M. 1½	6¾	6	7½	7½	M. 9	12½	6¼	8	9¾
M. 4	7	8	13¼	12¾	M. 16	8	3¼	6	7¾
M. 6	10¼	7½	14¼	10½	M. 11	11¼	7¼	7½	10
M. 4	7	6	8	7¾	M. 16				6
Ave.	8¾	6¼	10	9¾	Ave.	10¾	5¾	7¾	9½
City children in school.					Adults.				
F. 14	10½	8¼	6½	7¾	F. 34	13½	5½	6¾	7¾
M. 10	9¾	7½	5¼	6½	F. 36	10	9½	9¼	9¾
F. 6	11½	11¾	8½	11	F. 60	14¼	4	17	10¾
F. 12	11¾	6¾	11	8½	F. 32	10½	7	9¾	7¾
M. 15	10½	13	17¼	12¾	M. 36	7¼	4¼	6¼	6¼
F. 17	6¼	4	5¼	6	F. 34	5¼	3½	8½	5¾
F. 10	11	10¼	11	10¼	M. 26	15½	12	9	10¾
F. 8	13½	5¼	8½	8	F. 21	11	3½	8	9¾
F. 10	10½	7	7½	7¾	F. 26	5¼	5¼	6¼	6½
F. 10	12¼	8½	9½	9¾	M. 28	2	3¼	2¼	2½
F. 13	14	10	13	13½					
M. 15	4¼	3¼	7¼	5½					
Ave.	10½	7½	8½	8¾	Ave.	9½	5¾	8¾	7¾

From these tables and curves it will be seen that the averages of children below the school age are largest; it would also appear that country children are more active than city children. But the activity of the country children from whom the records were obtained was considerably above the average, I think. The activity of the girls and boys, men and women, is nearly the same. The adults were engaged in various occupations; the lowest record is my own while teaching in a country school.

<sup>1</sup>The real distance travelled may not be so very different, as children run a great deal and take longer steps at such times.



The activity is least on Sunday for all, and greatest on Saturday for all but the small children. Wednesday and Thursday<sup>1</sup> seem to be days of low activity also. But of course the numbers are too small to draw many conclusions.<sup>2</sup> A great many records had to be thrown away on account of some defect in keeping, some of these emphasized individual differences more than any preserved. Still a considerable difference will be seen from the table.

#### SITTING STILL.

The syllabus brought in something over 200 returns, of which the larger part were from the New Jersey State Normal School. The first purpose of the syllabus was to determine, if possible, whether the restlessness of children is a real physiological necessity, as is so often stated, or that it is merely the result of inclination.

<sup>1</sup> It will be seen that the results for the different days are not averages of large and small. The individual curve varies but very little from the average. The curves were made from the original records, not from the table.

<sup>2</sup> I hope to carry this experiment further.

The first question was as follows :

I. Ask your child, or, if you are a teacher, ask a few children at a time in your room, to take some easy position and see how long they can sit still without any movement, meanwhile with watch or clock in sight note time, and put down (a) which part moves first, fingers, feet, head, arms, legs, etc., (b) what kind of motion, usual or unusual, violent, or gentle.

(c) What efforts do you see to prevent these spontaneous movements, as, *e. g.*, tension of all the muscles, clenching mouth, hands, etc.?

I give some of the most characteristic returns.

M., 6. Fixed his eyes on one point, but he could not remain still; he would fold and unfold his hands, cross his feet and move his whole body.

M., 9. Sat still one minute, I then noticed a twitch of the lips, then a movement of the lips. He finally began to move all over and then got up.

I asked M., 6, to sit perfectly quiet. At first he said: "I can't," but finally sat down and remained quiet about 50 seconds.

F., 6. Sat still three minutes. She moved her head first. She clenched her hands in her effort to keep still.

F., 8. Looked at a point one minute, then her fingers twisted, and she said she was tired.

F., 6. Sat still 30 seconds, when she moved her hand, apparently without knowing it.

F., 4. Sat still 40 seconds, then moved her foot. When I told her she had moved her foot, she looked at it and said, "O! I could n't help it."

F., 8. Sat still 50 seconds, then crossed her feet.

M., 5. Did not remain motionless for a moment, his hands moved first, then his feet.

F., 9. Sat motionless three minutes.

M., 9. Sat still for one minute, moved his foot first.

F., 9. Sat perfectly still for thirteen minutes.

F., 4. Did not sit without movement for more than a minute.

Of course all these returns are very much abbreviated, but altogether they contain the most characteristic features. From the nature of the returns it would be difficult to make a table of just how long each child sat without moving. The differences are very great; but my own tests and the tests in the returns (so far as the exact time is given) will, I think, justify the statement, that children under five will not, as a rule, sit still more than 30 seconds, though now and then one will sit still as long as ten minutes. Children under ten will not usually sit still more than  $1\frac{1}{2}$  minutes, and oftentimes less than half a minute, though one or two have sat as long as 20 minutes. These results seem to show that the average child *cannot* sit still in a *test* for more than a very short time. But do they prove that a child cannot sit still? It is hard to tell because the test brings in several unusual factors.

Probably one reason children do not sit still longer in a test

is because they make so great an effort to sit still. They usually clench their hands, contract their brows, and set their teeth; as though they were going to lift a thousand pounds, instead of merely do nothing. Their breathing is often irregular, and they frequently try to hold their breath. They have the consciousness of being watched also. A little German girl of five said to the one who was observing her, "Don't look me all the time on." So, too, thinking about movements even negatively, always tends to cause them.

All these circumstances tend to make sitting still more difficult, but their influence is probably less than we might suppose at first. There are many children who do not make a great effort to sit still, but they do not succeed much better than the others. In the clinching of the hands and setting of the teeth also, you have an expression of the child's judgment, that sitting still is a hard thing to do. Doubtless there is a suggestion in the test that may have something to do with this. But a child will often say he "can't," when you ask him, and says he is "tired" afterward. In speaking with adults I find that some of them still remember, with a feeling of pain, the times they were required to sit still as children.

I think that, all things considered, the evidence will justify the conclusion, that the ordinary child cannot sit still *voluntarily*. It remains then to explain this restlessness and the cause of its disappearance, if we can.

Motion is one of the most universal characteristics of the animal world: to produce motion was the primal purpose of all nerve cells and nerve centers. Muscles might contract on contact, but it was necessary for the good of the organism that not merely one muscle, but a group of muscles should contract to secure or avoid not only contiguous objects, but objects often at a distance. It was thus necessary, that some slight stimulus, acting from a distance on some sensitive part, should liberate a large store of energy. At first there are simple definite reactions to each stimulus. But, as the environment increases in complexity, more and more complicated reactions are demanded, and intermediate cells are developed connecting the different reflexes. These cells increase in numbers until ultimately all reactions are joined with all stimuli, and the associational or rational levels of the cortex are developed. In the first state, the stimulus passes from the sensory cell to the motor cell, and brings on a reaction. But now the stimulus may be consumed in maintaining the activity or nourishment of a long series of cells, or stimuli may clash with each other, so that no action may follow for the time. This associational or intermediate area, receiving the stimuli from all sources, is always active in the working state. It thus not only serves as

a complicated switchboard for the nerve currents, so that each activity becomes more or less independent of its own stimuli ; but very likely, it serves as a storehouse of stimuli as well, so that *all* activities gain a partial independence of present stimuli. Here is born the possibility of rational control. In the fusion of its various sensations reason arises. But all that the higher areas have gained has been lost by the motor areas.

As the associational or rational areas were the last to develop in the race, so these are the last the child comes to use. In the meanwhile stimuli are transferred by earlier paths upon the motor areas, and these suffer from an excess of stimulation. When you add to this the fact that the poorer connection of the parts of the child's brain requires that each activity use its own store of energy ; we have, what seems to me at least, the real explanation of the child's restlessness. In accordance with this principle we may expect restlessness to diminish with the increase of intellectual activity.

In psychological terms this means, that thought or attention and restlessness are in inverse ratio. Observe an audience when interested and when not ! In striving for a state of attention or in expression of it automatisms are often increased. But when it gains possession of us, motion decreases with the increase of our concentration.<sup>1</sup> It is the same with the child. *He can sit still as long as he can be interested.* Even a very small child will sometimes sit like a statue for a considerable period, when his attention is taken by some bright or otherwise interesting object. A child's interest is shorter lived than a man's, because he has fewer associations with objects. He has but little power of abstract thought, and his interests are largely motor. I think each explanation is translatable into the terms of the other.

It should be mentioned further that intense attention tends to stop even the organic rhythms. The eyes are held open, respiration ceases, and even the heart may be checked for a moment.

In observations and tests upon the blind children at the Perkins Institute and Jamaica Plains, I found them much more restless than normal children.

Many of them kept their eyeballs rolling constantly.<sup>2</sup> A trait said to be common among albinos also.

In five-minute tests upon ten university students very few motions were noticed, and restraint was oppressive only in two cases. The eyes and lids were the most restless members.

<sup>1</sup>Ribot: *Psychology of Attention*, pp. 11 and 49; *Diseases of the Will*, p. 34.

<sup>2</sup>Laura Bridgman did the same, *Am. Jour. of Psy.*, Vol. IV. p. 281.



There seemed to be two winking rhythms, one slight and very rapid, the other a decided twitch, which would have been a wink had the eyes been open. The winking rhythm, according to my observations, made with a stop-watch during lectures and addresses, varies from 5 to 45 times a minute, with 20 as the average rate. It varies with mental conditions, and is inhibited by attention. It might prove another psychic index if it could be carefully studied. In close attention the lids may be held for nearly a minute, when seven or eight winks usually follow each other in rapid succession. This movement is so rapid<sup>1</sup> that the image is continuous, and we are usually quite unconscious of it.

Slight twitches of the fingers and turns of the head were the only other movements.

The answers received in reply to the syllabus show a much greater restlessness.

Syllabus, question XIV. Will you compose yourself in a comfortable position sitting, lying, and standing, and remain as still as if you were having a slow photograph, and describe your experience freely?

F., 18. At the end of four minutes I could not sit still for another minute.

F., 18. My muscles seemed tense, and I soon became tired.

F., 18. I did not experience any very unusual sensations.

F., 17. I felt as though it were a great strain on my muscles.

F., 18. It seemed as though I simply could not keep still.

F., 18. I could sit still 15 seconds.

F., 17. At the end of the third minute I felt as though I could stand it no longer.

F., 16. My feeling was one of rest.

F., 17. I heard every sound about the place.

It will be seen that the results are very different from those obtained from the university students, but the conditions were also very different. I have no difficulty, and feel no discomfort in *sitting still* for half an hour while thinking. But I find it very uncomfortable to sit still for five minutes and observe my sensations.

Sensibility is much increased. Many sensations, which normally remain below the threshold of consciousness, are raised into distinctness, and it is the little itching, pricking, rheumatic sensations, which soon make sitting still disagreeable if any one allows himself to notice them. So also the motor tendencies of all sensations become apparent. Infinitesimal impulses to move are magnified into strong desires by the attention they receive. A man is thrown back upon the old sensori motor mechanism by which motion is produced. The

<sup>1</sup> Mayhew found the average time to be 42  $\sigma$  in 450 experiments, *Jour. of Ex. Med.*, Vol. II, p. 47.

evidence of these facts, so far as it goes, seems to substantiate our previous conclusions.

I think it is both true, that the child is restless because he is inattentive, and inattentive because he is restless. But the latter is primary.

#### RESTLESSNESS IN SLEEP.

Syllabus, question IV. If you have an opportunity to observe children or adults in sleep, notice if they are ever perfectly still for any considerable period, or do their eyelids or lips move, expression of the face change, fingers clinch, etc.

I quote from the returns :

The longest time M., 23 months old, was perfectly quiet was 55 seconds. He went to sleep with his thumb in his mouth and every few seconds he would suck it vigorously.

F., 3. The eyelids are almost always in motion, the fingers move, the arms are raised, the head moves slightly, the mouth opens and then shuts, the legs are drawn up every now and then.

M., 10. Was perfectly still for ten minutes except that his fingers would twitch every little while.

I observed M., 10, for about an hour, and during that time there was scarcely a minute in which he did not move slightly.

F., 5. Will roll over usually and sigh and is apt to awaken, when people watch her.

F., 2. Moves her hands, draws up her limbs, puts her thumb in her mouth, twists her mouth, gapes, moves her eyelids.

Out of 97 observations on children and adults under this head, 83 report movements and 14 report none. Most of the observations were not for more than ten minutes, and a larger number might have proved restless on longer observation. The children I have observed were seldom quiet for half a minute at a time. In wearing a pedometer of special construction every night for a week, this recorded from 60-127 each night, with an average of 75, although nothing but turns of the entire body were measured. With another university student, who wore it three nights, the average was 86.

Descartes might have taken these facts as proof of his principle that, "the mind always thinks;" still they probably are pure reflexes. Sleep is a sort of reversion, a falling back upon lower levels of development, and as a consequence the excitations follow earlier paths and the associational areas are little used. The higher levels drop out and inhibitions with them. Dreams are mostly in sensor-motor terms. Slight stimuli probably would not arouse a general consciousness.

#### THE RESTLESS CHILD.

Syllabus, question V. Describe one of the most restless children you know, complexion, health, stature, flesh, color of

eyes, hair, etc., bright or dull, good or bad natured, regimen, discipline, etc., associations gay or sad.

I quote from the returns :

F., 6. I have never seen this little girl sit down to one thing for more than 15 minutes at a time. When she is asleep, she kicks the bed clothes and tosses around.

F., 6. Is very fond of playing with other children, but is so rough she cannot be trusted to play with a child younger than herself. She is unusually large and strong, quite fleshy, and very dull.

M., 4. When he is awake he is never still a minute. For a punishment he is often told to sit in a chair such a length of time. But even then he is not still ; he twists around, moves his legs and arms, plays with his fingers, etc.

F., 10. Has lately become very fond of reading, so she is not so restless.

F., 5. Seems to be very thoughtless and will hurt some of her playmates, but is then very sorry and will cry.

M., 8. Is constantly moving about in school and it seems impossible to hold his attention.

M., 5. Is always out in the street playing with every child that will play with him. He is into all mischief imaginable. He is never still for five minutes at a time, even while eating.

M., 7. Is very restless, delights in teasing and sports of an acrobatic nature.

F., 7. Is very severely punished when she does not obey, but she never minds this and will do the same thing again and again.

I have sought to select cases which give the most common characteristics. The number of cases was 152. The significant characteristics seem to be as follows : Good health, 93 ; poor health, 25 ; bright 123—of these, very bright, 71 ; dull, 10 ; tall, 41. These characteristics came out in answering the questions of the syllabus. The following, also, came out prominently, though only incidentally mentioned. They are apt to be boisterous and rude in their play, and often hurt other children without intending to. They are mischievous and disobedient to parental authority. They are often whipped but do not mind the whipping. They seem very insensitive to pain. The majority of the restless children described are under six years old. Restlessness appears to disappear with mental occupations.

The restless child seems to me an especially instructive type and one that is very little understood. He is the child who makes most of the trouble for his parents and the teacher. He is often thought to be willful and bad, and may be made so, if he does not receive proper training.

Restlessness as applied to children below the school age may be taken as nearly equivalent to activity. The physical activity of a child at this age is a very fair measure of the energy he develops. If this be true, then nothing is more evident than that different children come into the world with very different amounts of energy ; or better, with the capacity

of producing very different amounts of energy. Just as one animal will grow fat on a quantity of food on which another would remain lean, owing to the more excellent nutritive powers of the first, so the nerve cells of one individual may be built up more rapidly than those of another, and a larger amount of energy set free. For, if our word energy is equal to nerve force, then it seems fairly evident that the amount of energy of an organism must depend on the number and rapidity of metabolism of its nerve cells. But on the latter very much more than the former. If the metabolism is rapid, then the nerve cells are kept at high irritability all the time and the individual is restless and must act. This is at least a part of the constitution of the energetic, ambitious man in all departments of life. But on the other hand, if the rate of metabolism is slow, nerve cells will remain poorly nourished and unexcitable, there will be little spontaneity in childhood or later, as a strong stimulus is necessary to discharge one of these nerve cells. The person is "born tired."

The restless child is, as a rule, a peculiarly good animal, as well as seen from the characteristics given, boisterous, rude, mischievous, disobedient, talkative, insensitive to pain, fond of teasing, often cruel, destructive, social, often leaders, bright, yet thoughtless.

Restlessness in children up to six or seven years of age seems to be a good sign, but a bad sign afterwards. It does not usually last much later than this in its extreme form. The restless child should naturally develop into a man of action.

#### THE QUIET CHILD.

Syllabus, question VI. Describe in the same way one of the most quiet, inert children you know. Are they lazy, self-conscious, companionable, do they associate with older children, are they studious, thoughtful, sad, or gay, etc.?

I quote from the returns :

F., 12. Is the quietest child I have ever known. She is far from being lazy, for she is always working hard over some little contrivance she has made, or some new way to fix a toy.

F., 9. Very rarely associates or plays with other children, but would rather stay in the house and study or play by herself.

F., 7. Is studious, she will sit for hours reading without speaking aloud.

F., 12. Attended my school and attracted my attention by her quiet ways, sometimes never leaving her seat at recess or noon. She seldom ever played with the other children. I looked upon her as an angel child.

F., 7. Has that modest expression to her face like a grown-up person. She does not play out in the yard with other children, but prefers to stay in the house with her grandmother, with whom she lives.

M., 8. Says very little, and would rather sit down and do nothing than play.

F., 6. Is one of the most quiet children that I know. Her movements are gentle and slow, and her voice is low and sweet. She seldom speaks or plays with other children, but is quite content to stay in the house and play with her dolls all day by herself. She is always moving about doing something in her own quiet way.

F., 5. Never plays with other children. If spoken to her face flushes instantly, her hands clasp and unclasp, while she will not speak above a whisper.

M., 6. Would sit all the time at school, except recess and when called to recite, and watch the door, 10 feet away, and not move, as I could see, hands together, arms on desk.

Many observers said they did not know any quiet children. Their characteristics as compared with the restless children are as follows :

	QUIET CHILD.	RESTLESS.
No. of cases . . . . .	108	152
Good health (mentioned) . . . . .	44	93
Poor health . . . . .	22	25
Bright (all) . . . . .	57	123
Very bright . . . . .	14	71
Self-conscious . . . . .	28	
Thoughtful . . . . .	45	
Studious . . . . .	27	

It would appear that the health of the quiet children is not as good, and they are not as bright as the restless children. But of course the numbers are too small for safe conclusions.

Several types of quiet children can be made out.

1. There is the child who seems to lack energy all around, he is inactive mentally and physically, he is the typical dull scholar at school, he cannot be educated without unusual stimulation.

2. There is the child who is inactive from sheer rapidity of growth. He grows five or six inches in a year, and lies around all day.

3. Fat children are nearly always inactive.

4. The large number who are said to have poor health would indicate that loss of energy, due to disease, is one very important factor.

5. Overwork, mental or physical, is sure to produce quietness.

6. Many quiet children are only children.

7. There is a quietness in children which is a sort of precocity; they are premature adults. They have an abundance of energy, and are bright and studious—the parent's ideal of what a child should be. Many great scholars have been of this type. Quiet children are usually timid, bashful, sensitive, both to pain and slights, self-conscious and thoughtful. They must be handled with velvet gloves; a gentle reproof is

often a more severe punishment to one of these sensitive natures than a severe whipping to one of the rollicking, restless children.

#### CONDITIONS OF RESTLESSNESS.

In answer to the question: When are children most restless? there were 148 replies.

F., 17. I have noticed that children, who are not restless at all on clear days, are sometimes very restless on cloudy days.

F., 24. On cloudy or stormy days the restlessness was remarkable, and even exercise failed to quiet them.

M., 27. Children are most restless on days preceding a storm, so that an old teacher can tell the weather by the action of the pupils.

F., 17. Plenty of vigorous outdoor exercise makes a person less restless at the time, but if stopped suddenly they are more restless.

Out of the 148 returns, 2 said children were most restless in the morning, 112 in the evening, 14 on bright days, 107 on cloudy days, 8 in the fall, 110 in the spring; 15 said exercise increased restlessness, 116 said exercise decreased restlessness.

That children, as well as adults, are most restless in spring agrees with general observation. Perhaps there is a trace here of the primitive home-building and migratory instinct. Children certainly are more restless, if kept from active exercise, and on bad days, these two cases are often one, but not always. Several teachers from different parts of the country have said that children are more restless on days *preceding* a storm. Many of the lower animals seem to possess a barometric sense. Havelock Ellis<sup>1</sup> says this is stronger in women and children than in men.

When the class becomes restless the teacher may take it as a sign that the work or method should be changed.

The conditions of restlessness seem to be about the same in adults as in children.

F., 17. After an active life in vacation, it takes me a week or so before I can settle down and accomplish anything at my school work.

F., 21. When I change from an active to a sedentary life, I get sleepy early in the evening, and do not care to walk or study. I have often noticed this.

F., 18. I am not as lively and cheerful, as when I take plenty of exercise.

F., 32. The tendency to restlessness was very great in changing to a sedentary life. After studying a while I would feel compelled to jump up and pace rapidly across the room for several moments. I had frequent nervous headaches, my digestion was somewhat impaired, and I could not sleep well. It wore off in a month.

<sup>1</sup> Man and Woman, p. 274.

## GOING WITHOUT CUSTOMARY EXERCISE.

F., 19. If I go without my usual exercise, I become very cross and disagreeable.

M., 30. I become restless, nervous, and have headache.

F., 23. It causes restlessness, irritability, blues and impulsive movements.

F., 18. I get sleepy much earlier at night, and cannot rest as well.

F., 18. I yawn and feel tired and lazy. I have headache and see everything on the dark side.

A short time ago I heard the president of one of our largest normal schools say, that when school was out and the pressure of his work ceased, it seemed as though he would go crazy for a week or so until he got adjusted to new conditions. He thought this the cause of the death of Napoleon at St. Helena.

There were 114 cases: restless, 75; gloomy, 11; fatigue, 7.

Going without exercise, 123 cases: nervous, 13; stupid, 20; headache, 10; stretch, 47; irritable, 17; yawn, 67; gloomy, 6; restless, 66; sleepy, 18; impulsive movements, 51.

In the case of a change from an active to a sedentary life, the resulting restlessness would seem to indicate a certain accumulation of energy for motor uses, which is either used for other purposes later, or the rate of metabolism of motor areas slows up to a slower expenditure. In case of going without regular exercise the case is apt to be complicated with overwork and the disturbing of rhythms.

## SICKNESS.

There are several interesting things to be noted in the case of people who are not well.

F., 18. In a slight indisposition I am very restless. I will sit or lie in one position, and then in a few minutes will move again. Every little thing annoys me.

F., 39. When my mother has a headache or nervous attack her hearing is more acute than at other times. She can hear every word of a conversation going on on another floor.

M., 19. When I am slightly ill I am very easily distracted, and become nervous over every little noise. I had typhoid fever once for 16 weeks. Even a fly walking on my face would make my flesh creep all over.

F., 17. My cousin who has been in bed for three or four years at a time, and is now 18, is entirely changed from a child. When she was first taken sick at five years old, she suffered more because she could not go out than from pain. When she was able to go out after four years she was very quiet.

F., 19. After a long illness one becomes very sensitive to changes in the temperature and tactile sensations.

F., 18. When I have a slight sickness I feel cross toward everybody, and it seems as if everybody goes against me.

F., —. I have noticed that I am very cross when slightly ill. It makes my tactual sensations keener.

The numbers here are too small to have any statistical value, and can only be used as illustrations of facts already known.

The restlessness of the sick requires no further explanation than a consideration of their inactivity, discomfort, and the keenness of sensation. The keenness of sensation is mainly due, probably, to the attention it receives. The sick man has little else to attend to. But in other cases it can only be explained as due to the irritability of the area involved, caused in some way by the disease. Increase of hearing power is often mentioned in the returns. One often hears it mentioned by sick people. Perhaps this is one reason that noises annoy the sick so much.

Sickness is a delicate scale in which we may weigh the receipts and expenditures of life. Every energy of life seems to concentrate to resist the disease, and all other activities fall out. The sick man's resistance to stimuli is diminished, and we see more nearly what the influence of each element in the environment or each subjective effort is. Even the effort of sitting up or conversing is plainly registered in this delicate scale. Noises irritate us.

If we follow development backward it would appear that the first purpose of every stimulus, from whatever sense, was to produce motion. Secondly all these sensations serve as the basis for the development of intelligence. But the fact that every sense stimulus still serves to increase the pressure on the dynamometer, shows that their motor tendency is not yet lost. If stimulation tends to make nerve cells irritable unless they react to it, then every sense stimulus will *tend* to produce nervousness and restlessness. There must be a degree of stimulation, which is best for each brain, which will be in inverse ratio to its excitability.

Let us examine the auditory stimulus for a moment. It is continuous during our waking state and to some extent during sleep also. We do not consciously, but may, if we will, hear a great variety of noises at any moment. Noises make sick people nervous and restless, cause nervous headaches, increase muscular power<sup>1</sup> and tend to cause motions (as any one can observe in sleeping children). These sounds are more or less suppressed in proportion to the mental concentration at the time.

These facts give further evidence for the theory heretofore advanced. We say the brain is always active in the waking state, but by this we do not mean its motor areas nor consciously its sensory areas, but rather its higher areas, active in deliberation. That brain cells are active in thought is shown by the increased rush of blood to the head,<sup>2</sup> its raised temper-

<sup>1</sup> See part II.

<sup>2</sup> Mosso *Die Ermüdung*, p. 70, seq. Sanford, Dawson, *Exper.* at Clark University (unpublished).



ature, and the excreta thrown into the blood.<sup>1</sup> We must assume a constant stimulation to maintain this constant activity.<sup>2</sup> This can only come from sensory nerves; yet the areas stimulated are not sensory areas, nor does stimulation result in sensation. The intense activity of higher levels inhibits sensation.<sup>3</sup> Must this not mean that the stimuli of the sensory areas are used to maintain the activity of the higher areas? If nerve cells tend to discharge from points of higher to points of lower tension, then any active area would tend to cause discharges upon it from all areas connected with it. The strength of this tendency would be in proportion to the intensity of the action of the active area. If, on the other hand, a considerable sensory area were aroused, it would cause a discharge from higher levels, which would increase sensation and divert the attention. If two areas were active at once, the current would shoot across and the two would be associated.

Returning to the special sense of hearing, we may suppose that this constant din of incoming noises is one of the chief means of carrying on the activity of the brain. Donaldson mentions a case of a boy who was bereft of all his senses except hearing in one ear. He says the boy would go to sleep immediately, if this ear were stopped with batting.<sup>4</sup> Sharks will not move or feed, if their olfactory sensations are cut off. Probably we are more dependent on visual and auditory stimuli than any others. The numerous stimuli of city life cause the nervous system to develop more rapidly than it does in the country. Puberty comes about two years earlier. They enable the average man to maintain a much more intense effort than he would be able to do in the country. Probably the noises of the city are a benefit to phlegmatic people in helping to keep up their nerve force. But to many intellectual workers they are excessive,<sup>5</sup> and to the nervous and the sick they are misery.

It may be asked "Why are sounds so much more insistent than sights?" The ticking of the watch on my table annoys me more than the whole row of books, the scratching of the pen more than the sight of the pen and the moving hand. The sound stimulus seems to be more powerful and the reason may very well be, that sounds are not as continuous and are more important individually than sights; inasmuch as sounds always indicate that there is something moving or doing something, and were consequently of great importance to the organ.

<sup>1</sup> Binet and Henri: *La Fatigue Intellectuelle*, p. 332.

<sup>2</sup> Donaldson: *Growth of the Brain*, p. 284 and 285.

<sup>3</sup> Ribot: *Psychology of Attention*, p. 95.

<sup>4</sup> *Growth of the Brain*.

<sup>5</sup> Kant, Schopenhauer, Rousseau, Carlyle, for instance.

ism in seeking its prey and avoiding its enemies; while the great majority of the visual field has no interest whatever to the animal. Some one should study the dynamogenic value of different sense stimuli, as correlated with the past of the race. If one odor liberates a certain amount of energy, and another odor a very different amount, the reason for this probably lies in their associations with dangers or effort of some kind in the distant past.

How shall we explain the hunger for noise of small children? Very much the same as any other hunger, I presume. The auditory cortex craves stimulation, and the small child with his rattle is laboring in one of the first stages of his education—sound discrimination.

If we must look to external stimulation for the ultimate source of all motion, we must see in noises one of the main causes of restlessness.

Sight furnishes a perfectly continuous stream of stimuli during waking hours, but the visual cortex is better connected with the higher levels than the auditory and its motor expression is consequently better inhibited.

#### EXCITEMENT.

Excitement is pre-eminently a restless state, and is perhaps the state in adults which most resembles childhood.

F., 31. Excitement makes me talk more and faster than I usually do.

F., 23. In great excitement I cannot control my actions or do anything requiring movements of the small muscles. I am unable to sleep. If the excitement is very great, I am almost paralyzed mentally and physically.

F., 18. Excitement, if long continued, makes me tired and usually ends in a sick headache.

F., 17. Excitement makes my hands cold.

F., 20. The effect of excitement is to make my cheeks hot and red, my head seems to feel clearer and I talk much more glibly; yet the play of my fingers on any object shows nervousness and afterward I feel tired.

F., 17. I want to fool with something when excited, and usually bite my finger nails.

F., I enjoy excitement because it relieves me of my cares for the time being.

F., 24. Excitement makes me ill for a short time. I am usually confined to my bed and have a nervous headache.

F., 18. I lose all control of my thoughts, and think of everything but the right thing.

The physical effects seem to be a violent beating of the heart, flushing of the face, increased circulation in the brain and great irritability of all cerebral cells, which results in a diffuse discharge upon all the muscles and glands, causing tremors, nausea, and various similar phenomena. The individual is very restless and often nervous. The cerebral ex-

citement is too general to be inhibited ; it is like a city all on fire at once, with which the engines can do nothing. Every stimulation tends to issue in an immediate reflex. The philosophic powers drop out. A person is thoughtless and impulsive, he tends to speak all his thoughts, is apt to be irritable and takes offence at the slightest cause, he loses control of his muscles, his hand trembles, it becomes absolutely impossible to sit still, all automatisms become very pronounced, he is unable to sleep at night. The symptoms of excitement and a mild state of intoxication are very much the same, both are pre-eminently social and motor states.

Perhaps excitement is good for most of us occasionally. It makes us forget our cares and serves as a sort of Turkish bath to the nervous system, to open all its pores and make all its paths permeable.

The characteristics of childhood resemble those of a constant state of excitement.

#### SUMMARY.

The activity of children below six, as shown by pedometer records, is greater than at any later period. But children differ greatly in activity.

Children under five could not sit still longer than 30 seconds in the test. Children under ten could not sit longer than one and a half minutes.

The rational cortex, probably, arises as a series of intermediate cells for connecting the various sensory and motor areas. This rational or associational area at length becomes so great that a large part of the stimuli may be consumed in maintaining the metabolism or activity of its cells. All that the rational areas gain is lost by the motor areas, as the first purpose of every stimulus was the production of motion. The rational or associational areas are the last to develop in the race and in the child. With their development restlessness is inhibited in a degree proportional to their activity. They inhibit lower areas by using their stimuli. The child can sit still as long as he can attend.

Blind children are more restless than other children.

The nerve cells of different individuals seem to have different rates of metabolism, and as a consequence one may develop much more energy than another.

Children are most restless near the close of school, on cloudy days, in the spring, when they go without exercise.

Auditory stimuli are perhaps of great assistance in maintaining the activity of the brain. Hearing is inhibited by thought.

Excitement and restlessness are closely allied.

## IV.

## PEDAGOGICAL INFERENCES.

From what has been said we see on the one hand a great danger, excessive brain work, and on the other a great need, physical exercise. Can any system be devised that will obviate the one and satisfy the other, and at the same time secure equivalent mental results.

Coming up from untold generations the progenitors of man have been successful in adaptation to environment, in finding food in time of scarcity, in securing prey or escaping their enemies very much in proportion to their activity. Movement is the most basal thing in the animal world. The "joy of movement" is one of its most deep seated pleasures. No one can notice lambs or colts or any young animal without feeling this. The child is still in the animal stage of his existence. The irresistible impulse, which has come down from that struggle in ages, when life and food depended on fleetness of foot and strength of endurance, is still surging within him, and drives him on to action. Not only does he refuse to sit still for a half a minute at a time, but he seldom walks when going anywhere, but runs or gambols along like a young animal. A very large part of all his games are running games. Of the children I have questioned as to whether they liked to go to school or not, nearly every one who has said "no," has given as the reason, "because he had to sit still," or "stay indoors," or some other reason which meant restraint of motion.

A boy of seven once said to me of his own accord: "Teacher, I don't like to sit in these old seats so long. After I sit a while it seems as though I'd just have to get up and run around the schoolhouse." He was rather of a quiet boy, too. Children will contend for the privilege of collecting the waste paper, or distributing the pencils, etc., where they would count it work at other times. A housed and seated child is like a caged animal, all his most fundamental interests are put in abeyance.

If childhood is the animal period of life, it should be the time for animal (physical) culture. It is then that interest in and love for physical movement is greatest. The greatness of childhood consists in swiftness of foot and strength of body and limb. The school hero is usually the boy who possesses these qualities.

Childhood is the time of the greatest spontaneity of motor centers. If the strength of the contraction of a muscle is determined by the strength of its stimulation, is it not probable that its increase in strength will be determined by the amount of its stimulation? In other words it will be most rapid in

youth. If motor areas furnish a large part of the energy by which intellectual labors and worries are to be borne, it is exceedingly important that these be developed to their utmost as early as possible; that a broad basis of health and endurance may be raised on which to build the superstructure of higher things. Physical health and development must be the first interest of education. Public gymnasia should be established, and every city should furnish ample playgrounds or athletic fields. The Spartans put their youth under training at the age of seven.

On the other hand we must consider for a moment what is the effect of our present system, so contrary to nature, upon the child. We have seen that excessive brain work may dwarf the stature and weaken the constitution. We know, also, that from 15 to 60 per cent. of our children become nearsighted before leaving our schools; that a very large proportion, especially of the girls, have curvature of the spine; that a great many become nervous, and not a few have chorea; that among the girls at least only a very small proportion finish the high school in a state of good physical health. Not all of these evils are due to the school, but at least a part are; to that part for which the school is responsible there are two elements: the one to overwork and worry, and the other due to being indoors and enforced inactivity. We have seen how difficult it is for the child to sit still; that it is this which makes school disagreeable to him; that his personal discomfort makes it hard for him to keep his mind on his task; that long restraint tends to make him nervous. However, it seems probable that the lesson of quietness is one which it is necessary for the child to learn. There is no probability of his acquiring the power of deliberation until he has learned to be still. We have conjectured also that the high pressure of motor areas may be instrumental in making their associated connections permeable. Hence we cannot agree with Dr. Shaw that the ultimate solution of this problem is "using the motor activities in teaching," though that is perhaps the only solution, if we are to require so many hours of school. But does it not seem absurd to require of the child so much confinement? Here is a young animal whom we wish to make into a rational creature. He comes to us with a large animal love of freedom and out of doors as the dearest boons of life. Surely we should begin to tame him gradually, and not require more than two or three hours of quiet each day at first.

We are suffering from a false ideal of education which has been handed down to us from the Renaissance. We seem to think that to master books is the only way to become learned, and to become learned is the object of education. Whereas

neither of these propositions are true. One can gain nothing but second-hand information from books, and the object of education is not to make men scholars. The time when a man can become learned from books alone has already passed. We live in an age of science; and observation and experiment are its fundamental methods. Our ideal student is no longer an emaciated consumptive with a wet towel about his brows, bending over his Homer in the small hours of the morning, but rather the well-rounded man of the world; one who knows books, but who knows men and affairs as well; one who has drunk deeply from every experience an honorable life can offer him; one who has ideals of action as well as thought. How absurd in the face of modern culture to teach the child the contents of a few books and think we are educating him! All our cities are becoming cosmopolitan; almost anything that can be learned from books, can be better learned from the observation of the things around us. The city in its parks, museums, libraries, art galleries, theaters, sermons, business, etc., offers a liberal education to every one whose mind is open to receive it.

The charge of impracticality can always be preferred against book learning: It is less often called up by our every-day experience; its lessons are less easily applied; they are acquired with greater difficulty and more easily forgotten than lessons from observation and experience. It is at least as important that a child be able to observe well, as that he be able to master books. Observation is usually of things right about us, which will touch our lives the oftenest. The problems which life gives every man to solve cannot be solved from books. He must learn to study from nature herself, those things on which his success depends. *That man is best educated who best knows how to solve his life problems, drawing on every resource everywhere that can help him to that solution.* But knowledge in its largest sense is a very small part of a well rounded education. It is surely as worthy an aim to admire a beautiful picture or poem as to know how it was constructed; it is as much to love a great good man as to know his biography; and to be able to do a thing is surely greater than to know how it is done.

*There are five aims to be gained by a well rounded education:*  
 1. *A good physique;* 2. *To know what our life requires us to know;* 3. *To be able to do whatever we need to do;* 4. *To admire the beautiful;* 5. *To love the good.*

If the child is to repeat the history of the race, nature must be his first environment. Nature has everywhere been man's first teacher, and on the complexity of the reaction she demanded has largely depended his progress. Just as the savage has seen in the storm or the sunshine, not the action of

a natural law, but the beneficent or malevolent action of a God or demon, so the child, looking forth upon nature, sees everywhere a nature like himself. He knows no impersonal forces, no natural laws of physics. The brier that pricks his fingers, the ivy that poisons him does it from ill will, and well deserves to be broken. The child's thinking is mostly feeling, and feeling knows only the living. Alas, that for us the day should come when we find nature a mere machine! That we should calculate its formulas by mathematics and think we have solved its mystery! If a man might *really* live, but for an hour, in such a universe of death as some scientists would make this to be, he must find life itself unbearable. The living soul would still live and find life around to respond to it. If man is indeed shut up in an iron prison; if from stars and flowers and mountains come no voices to soothe his spirit; if nature herself is a mere total of un pitying, unsympathetic forces on which man is borne along like a bubble;—where shall he find an environment for the feeling side of him? A link between mind and mind? The animism of the child still lives in us. So long as feeling gives an element to thought, it must still live. The poet, the painter, the musician, the child will feel it most, but he who is not entirely sunk in self must find in nature some answering chord which tells us we are all akin. We find a society in chairs, pictures, books, anything near us in accordance with this principle. But to the child, whose life is so largely feeling, all these things are intensified, and in nature and living things he finds the fullest response. Here, in woods or flowers or animals, he sees companions, and his imagination seeks to fathom the motives of their actions and the pleasure of their lives. Could anything cultivate the heart more than this living world and make it responsive alike to the fancies of the poet and the teachings of religion? Here in this primitive nature love are the roots of the love of the beautiful and the good. The nature lover is always reverent, he believes naturally in the divine. The child's attitude combines the religious and scientific. All true science must be guided by love and reverence.

The child is interested in all the objects around him, but especially the living things. His attitude toward them is truly scientific, he observes them from every point of view and subjects them to all sorts of experiments. He is interested in everything new. Notice how soon anything going on in the street will call a crowd of children. When I was teaching in the country the children used to ask if they could n't go to the windows when a funeral procession was going by, or if I would n't give them a longer recess so they could see it. The child is deeply interested in what he sees and does not soon for-

get it. Excursions and travel should fill as large a place as possible in this period of middle childhood. But science, especially the field sciences, botany and biology, should be the first studies.

Another sad thing of our school system, especially of our city schools, is that, when the children have finished them, there is nothing which they can do. The boys have not learned to use tools or make things, the girls have not learned to cook or sew. Our present system is making an almost absolute breach in sympathy between the classes. If the children of the rich had learned in school to carry on work which forms the occupation of laboring men, would there not be a broader base for sympathy between them? Would it not tend to break down the prejudice that manual work is degrading? Should it not be true that the men who stand at the top have actually passed through the stages in which the laboring men still live? Just as the foremen in the shops know the trades of all the men under them.

And then, too, here would be given the first stimulus to many a youth of real ability, who would develop later into a skilled workman or master. The youth going from school would find the acquirement of a trade much easier and his ultimate perfection higher, because of having learned to make these adjustments in the plastic period of youth. At present the boy does not get a touch of manual work until the time for forming ideals is largely past and the trades are left out. If the child is to repeat the history of the race he must be a workman before he is a lawyer or doctor. Is it not as well worth our while to learn to do all the race has learned to do, in some crude form, as to know all the race has known.

Yes, you say, but our curricula are already overloaded and our teachers and scholars overworked; how can we find time or strength for these additional burdens? As I have taught and visited schools, I have been more and more impressed with the fact, that the children do not work more than half their time, and the great problem of discipline is how to keep a child still, who is doing nothing. The children are not to blame for this: five or six hours of hard mental work a day is as much as most *men* can stand. The question irresistibly suggests itself, why not have a half day session if the child can do all his work in half a day? It would seem that he could not, if it had not been amply tried. But it is well beyond the experimental stage already.

I make a few quotations from Chadwick's "Health of the Nations."<sup>1</sup>

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<sup>1</sup> Richardson's Condensation, Vol. 2, p. 170-176.



"The general results stated have been collected from an experience during a period of from twelve to fifteen years of schools, comprising altogether between ten and twelve thousand pupils.

"From such experience, it appears that the general average school time is in excess fully double of the psychological limits of the capacities of the average of the children for lessons requiring mental effort."

"The preponderant testimony is, that in the same schools, where the half-time factory pupils are instructed with the full-time day scholars, the book attainments of the half-time scholars are fully equal to those of the full-time scholars, *i. e.*, the three hours are as productive as six hours mental labor, daily. The like results are obtained in the district pauper schools."

"When book instruction is given under conditions combining bodily with mental exercise;<sup>1</sup> not only are the book attainments of the half-time scholars proved to be more than equal to the full-time scholars, but their aptitude for applying them are superior, and they are preferred by employers for their superior alertness and efficiency."

"Mr. Charles Paget, M. P.,<sup>2</sup> from Nottingham, tried a similar experiment in the village school on his estate. The school was divided into two sections, one of which was kept to the ordinary work for the ordinary hours, the other for half of these hours only, the rest of the school time being devoted to work in the garden. At the end of the term the half-time, or gardening boys, had excelled the others in every respect, in conduct, in diligence," and in the results of study.

In the Worcester Model School, the pupils work a half day only and easily keep abreast of the children who are in school all day.

In our truant schools the children spend only a half day in school, and the other half in working in the garden or the shop. Yet these scholars go back after six months or a year in advance of their classmates, who have gone on for the whole day in the common school.

Mr. Kline in studying truancy last year was led to a similar conclusion,—that a half day is better than a whole day.

Our whole school system from top to bottom is unnatural; it makes too wide a gulf between school and the life for which it is supposed to prepare. Like the scholars of the middle ages we learn our grammar first in the hope that some ten or fifteen years afterward we may put it in practice. If we will but con-

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<sup>1</sup> The same, p. 181.

<sup>2</sup> Taine's Physical Education.

sider it, any of us can satiate our craving for knowledge by one or two hours hard reading, and gain more facts than will ever bear fruit in our lives. I believe the great curse of our higher schools is over-feeding, which leaves us no time or strength for mental digestion, and as a result there is no independence of thought, and no idea of putting the precepts learned into practice. The student goes to college like a sack to be filled. The scholar, far from being a man of leisure, is the one man in the world who often has no hour of relaxation from seven o'clock in the morning until eleven or twelve o'clock at night. He has no life. It would be nature's way to learn something when we need to know it, not to swallow whole libraries in the hope that they will sometime be useful. If school learning is something like a set of rules to be put in practice, it is important that we have some life experience, in which to try them before school is over. It is no wonder that so few of our great men were noted scholars.

Even if the child should not gain as much book learning in half a day as he does in a whole day, we have sought to show that he may gain a great many other things which are quite as valuable. Not the least among which is that he will gain in power to concentrate his attention rather than learn to spread a little labor over a great deal of time.

I wish to make acknowledgments to Dr. Hall for proposing the problem and for many suggestions in this work, and to all those who have either served as subjects in experiments (several of which are not here reported), or sent replies to the syllabus, and especially to Miss Lillie B. Williams for the admirable returns received from the New Jersey State Normal School.

## NOTES ABROAD.

During the past academic year the writer has made a pedagogic trip through Germany, France, and Great Britain. His attention was directed mainly to university courses bearing on psychology and pedagogy, and the aim was to meet men and get ideas. Arriving in Germany at the close of the summer semester only a few days remained of the lectures. These days were spent at Giessen in Hessen, the inopportune deaths of Professors Wolff and Meyer at Bonn, and of Prof. Preyer at Wiesbaden having rendered futile the previous stops. The following notes are left in unelaborated form as better suiting the informal nature of the trip and the personal character of the facts.

During the summer semester of 1897 the only course of lectures on child study in the philosophical department of any German University was that on "The Mental Life of the Child" by Prof. Karl Groos at Giessen. Groos's study of play in animals has been followed by a study of play in children and this subject has led him, in order to familiarize himself with the whole of child life, to gather the material for the course above mentioned. Being unique in Germany, the course was announced with many misgivings as to its success, but it was attended by a considerable audience of interested students. Prof. Groos, who has this year accepted a call to Basel, is a young man (b. 1861), hungry for information from abroad and eager to avail himself of new ideas, an enthusiastic worker, and a man of great promise. His second volume on the plays of children is now ready for the press.

Prof. Hermann Schiller (b. 1839) is a man of wide experience and author of numerous pedagogical writings, loquacious in conversation and reminiscent in lecturing. He is sometimes classed with the Herbartians; but, although adopting a sort of concentration idea and favoring the formal steps, he repudiates the name and belittles their influence. According to his view, the Herbartians in Germany are a vanishing quantity, their great leaders (Stoy, Frick, Dörpfeld, etc.) dying and leaving too little interest and energy in the younger generation to continue their work. Schiller, in company with Ziehen in Jena, is editing a new series of pedagogical and psychological monographs and, like Erdmann (formerly in Halle and now in Bonn) has done some experimental work himself, with the result that he "don't think much of it all anyway." The united library of the gymnasium and university seminar is exceptionally large and well supplied with special pamphlets representing the newer ideas and current pieces of work. The able professor of modern languages, Dr. Dorfeld, is librarian, and has charge of the initiation of candidates for secondary schools into their work in French and English.

Arriving at Jena in time for the vacation courses of the Rein School, I had expected to find there the cream of thought and new ideas rising to the surface and ready to skim. But the great percentage of strangers from abroad has turned the lectures into a school for teaching German to foreigners. For this purpose it is excellent, but I found only one course that seemed to have any material in it more recent than ten years old. This work was by Dr. O. W. Beyer, who has made a specialty of manual training. He had a room full of books on the subject, pasteboard models, and diagrams, and at the close took his

class up the Saale valley to Pössneck to examine one of the best organized school-gardens in Germany. There on a plot of ground prepared in 1895 at a cost of \$750 and requiring an annual outlay of only \$75, six hundred pupils have each his or her separate garden patch, and every day between 5 and 6 P. M., they come to weed, water, hoe, train or otherwise attend to and reap what they have sown. The central path in the garden is reserved for the parents who come there to promenade and enjoy the sight as well as encourage their children and help them carry off the armloads of cabbages, potatoes, lettuce, onions, turnips and flowers for home consumption. Besides these separate beds, the garden contains a tree nursery, a frame shed for class use (as the school building is fifteen minutes distant), separate sections for industrial plants, hemp, flax, wheat, corn, rye, etc., for poisonous plants and noxious weeds, for alpine or mountain flora and for swamp plants. As far as possible, plants that grow together in nature are kept together under natural conditions in the garden.

In a new edition of Rein's "Theorie und Praxis," Dr. Beyer has been commissioned to revise the entire curriculum from this new standpoint of handwork, bringing everything into organic relation with it and making it the center out of which the other school subjects grow. For these ideas, compare his "*Naturwissenschaften in der Erziehungsschule*," (Langensalza).

The new building for the Practice School at Jena is completed and the school expected to move in last Easter. In addition to three smaller classrooms, there is one larger classroom for the *Probekationen* when all the seminary attend, one large room for the Thuringian School Museum and one for the Seminary Library, beside office and three living rooms for the training teachers, and in the basement, gymnasium, bath and workshop. The building is of brick and sits back from the street a considerable distance and is surrounded by the school garden. It is unique in Germany, all the other universities concerning themselves exclusively with gymnasial pedagogy and therefore utilizing a regular gymnasium as practice school.

Taking a suggestion from Helena Lange, E. A. Fabarius proposes in "*Die allgemeine Dienstpflicht*" to require by law of every normal girl of eighteen years of age three years' service in housework, nursing, sewing, etc., corresponding to the obligatory army service for the men. Another proposal in "*Der freiwillige Dienst in der Wirthschaftlichen Frauen-Hochschule*" by Ida von Kortzfleisch plans to give girls of 20 years who have passed through the *Höhere Töchterchule* a training in woman's work. Both of these proposals merit attention.

Trüper's Institution for abnormal children is ideally situated on Sophienhöhe, overlooking Jena and the valley of the Saale. Each pupil is studied individually and a careful record kept of physical and psychical tests, treatment and reactions. A series of such life histories or "pedagogical cases" (corresponding to the cases of the lawyer or the doctor) is being published in "*Kinderfehler*" (Langensalza), which seems to be almost the only child study periodical in Germany.

Director Ufer in Altenburg, who, nervous himself, has made careful studies of nervousness in school children, and has recently reissued Sigismund and Tiedemann with notes, seems to be the coming leader of child study work among the German teachers. At the spring meeting of the the Thuringian teachers at Erfurt, he was to propose the formation of a German society for child study. While at Altenburg I heard him give one of the very best lessons on the 7th Commandment, developing the ideas of the family relation, its importance, mutual duties and helpfulness. He treated successfully delicate topics of the home, love, duties of children and their rights in a

masterly way that was simple, impressive and adapted to children, without being childish. If we could have such lessons in religion in our schools we should gain much.

Prof. Fritz Schultze in Dresden is writing a "*Vergleichende Seelenkunde*," the fourth volume of which will contain a genetic psychology.

One of my most charming excursions from Jena was with Dr. Lindley to the old homes of Fröbel on the border of the Thuringian Forest. We took the steam car to Rudolstadt, famous for its Anchor building blocks that have delighted millions of children. Beside the building blocks, Richter has a chocolate and candy factory, a bathing establishment and a sanitarium, a patent medicine laboratory and warehouse, lives in a palatial castle and owns nearly all the ground on which the city stands. Keilhau is about an hour and a half distant. Most of the old buildings are still standing, although much added to. The school is now converted into a regular Realschule and has lost entirely its original character of experimental school. It is situated in as lovely a valley as exists in Germany. We can understand some of the love of nature that breathes through the pages of "The Education of Man" when we look upon the surroundings in which Fröbel wrote and worked. Fifteen minutes' walk beyond the school brought us to the top of a ridge from which a magnificent panorama of the whole valley in which Blankenburg lies and the northeastern part of the Thuringian Forest stretched out like a map. In Blankenburg, Fröbel's old home is now a bicycle repair shop and the house in which he established his first kindergarten is part of a public school, what was the "*children's garden*," according to Unger's drawing, laid out with separate flower beds, is still a garden but not used by the school. We found a number of old pupils of Fröbel who could tell anecdotes and experiences.

The old university building in Bologna is exceedingly interesting with its historic clinical amphitheater, its court of honor covered with the names of its illustrious former members arranged by nations, and its new halls with memorial tablets to its women professors. In front is a marble statue of Galvani performing his epoch-making experiment on the frog.

Our School for Classical Studies at Athens is engaged on very important excavations on the site of old Corinth that have been so far successful that the site of all of the chief public buildings in the ancient city has been determined, although when the excavations began the only visible remains were a few ruined pillars of an uncertain temple. At Athens the Parthenon is being rescued from what would soon be certain destruction by the weather and by earthquakes. New marble girders are taking the place of the old blocks that had become rotten with age and the loose pieces are being braced with iron.

In Vienna there is nothing new of interest in pedagogy at the university. Prof. Vogt, the president of the *Ver. f. w. Päd.*, is an able logician but aims at nothing more than clearness of exposition of Ziller's work. The university is in no sort of sympathetic rapport with the schools and therefore exerts no noticeable influence on them. On the other hand, the Austrian teachers look back gratefully to Dittes who was opposed at every turn by the present professor of pedagogy. Dittes's work is continued by Hannak, whose interest in pedagogy, however, is chiefly historical. The Pedagogium is unique in being a continuation school for city teachers in office.

Every student of school hygiene knows of Prof. Leo Burgerstein, but perhaps not many know that he is by profession a geologist, which

subject he teaches in a Realschule, giving only his spare time to the study of school fatigue, etc. He was the most helpful man I met in Vienna and gave unstintingly of his time and resources, going over his more than 150 correspondents in all parts of Europe and advising what men to see and what places would be worth visiting. His pioneer work on school fatigue was carried on in the face of great discouragements and utter lack of cordiality on the part of the school authorities. The data obtained were worked over to a much greater extent than their reliability justified, in order, as Burgerstein said, to demonstrate what could be done if data were taken in greater quantity and under more cordial conditions. Burgerstein was busy on a report on *Wohlfahrtseinrichtungen* to be presented at the Emperor's jubilee in May of this year. After this he intends to return to his previous investigation into school fatigue.

At Breslau, Ebbinghaus was lecturing on experimental psychology and pedagogy. He attracts students by his own personality and vivacious, lucid style, rather than by any material facilities. For, there was no laboratory to show and no research was in progress, except the one being conducted on school fatigue by a special commission of which Ebbinghaus is the most prominent member. In fact, he says the German students that come to him do not want to become psychologists but wish only a survey of the field, so he aims to meet this want, giving up original research since married life makes impossible that regularity and uniformity of life necessary for a reliable experimental self-study of mental work. He gives up all his spare time to his editorial labors and writing his new book. He wishes some one would take his work on memory more in earnest and carry it forward, as he believes it is entirely possible to do so.

Dr. Stern, Prof. Ebbinghaus's assistant, is a promising young private docent of whom I heard good report.

Genial, sociable almost to a fault, and so well known that even the dogs wag their tails and prick up their ears as he passes, Hermann Cohn, better known as Augen-Cohn, has to stop when going along the street, every five or ten minutes, for personal exchange of friendly words with his thousands of acquaintances. He has been a specialist in eye diseases for over thirty years, introducing many reforms in manipulations and improvements in operations. He has lectured without pay for a quarter of a century at the university.

Leipzig undoubtedly has now as fine university buildings as there are in the world. The money has been well spent, without extravagance, but everything of real value has been secured of the best quality. The electrical lighting is excellently arranged. The light thrown by reflectors placed under the large arc lights is a second time reflected from the white ceiling and dispersed evenly over the entire room. It is easier on the eyes than daylight, because of its evenness.

Prof. Wundt, greater now as philosopher than as psychologist even, appears at his best at present perhaps as a lecturer. His masterly presentation of Greek philosophy and race psychology last winter was heard by a crowded auditorium of over four hundred. The new rooms of the psychological laboratory, fourteen in number, arranged according to his plans, are by far the most extensive and complete in Germany, and contain many historic pieces of apparatus as well as some very new and costly ones. The new psychology has many opponents still in Germany. Men such as Paulsen in Berlin, Erdmann in Bonn, and Fischer in Heidelberg minimize its advances or, like Heinze in Leipzig, believe that Wundt will yet live to see a great reaction, and that this revulsion in confidence in the new psychology is now well begun. To

all of these sceptical misgivings Wundt smiles placidly, full of confidence and clear as to the grounds of his faith.

Flehsig is an extremely interesting man to meet, full of his new discovery of "*Denkorgane*," and ready to talk to any one who is interested and appreciative. The whole matter is in a state of flux in Flehsig's own mind. One time he will tell you he is sure of 30 centers positively demonstrable, and a few weeks later he is just as sure of 40. This unsettled condition of his ideas is retarding the issue of his new book, for which the plates alone are said to cost fifty thousand marks.

Volkelt seems very bright and keen, perhaps a little narrow, but an excellent man to work with. He was conducting a good seminary in Herbart's *Allgemeine Pädagogik*, with thorough elucidation and lively discussion.

Heinze speaks indistinctly and fails to look you in the eye, but is a charming man to meet and has written an extremely serviceable continuation of Ueberweg's History of Philosophy, giving an account of current philosophers.

Poor old Prof. Strümpel still lectures on the Criteria of Truth. It is a pathetic picture to see the feeble old man come in leaning on the arm of his *famulus* and sit down to continue his course, "if God permits him to finish."

Prof. Marcs had an excellent seminary in historical method. The aim was to train in the weighing of evidence, sifting truth from error and dealing directly with the original sources. The period treated was the March days in 1848 in Berlin, when the king's vacillation was encouraging lawlessness.

The professors of pedagogy in Germany, with perhaps the exception of Rein, seem to have no interest in the study of educational problems, and nowhere did I find them doing anything themselves along the newer lines. Several, while lamenting it, admitted frankly that pedagogy was a dead subject at the universities, and that they looked to America for new inspiration.

Halle has a splendid set of medical buildings, and makes a great showing with such men as Hitzig, Roux, and Bernstein.

The most American professor in Germany is perhaps Conrad, who has exercised the greatest influence in the education of many of our leading economists. He conducts a seminary, in which the interest is intense and maintained, the discussion always lively and earnest. These results are due solely to his pedagogic tact.

The Frankeschen Stiftungen are always a mine of pedagogic wisdom, if one has time enough to stay for two or three weeks. In less time one cannot form any adequate conception of the schools. Frick's Seminarium Præceptorum is continued under Director Fries.

Berlin is badly off for a satisfactory university building, and after being accustomed to the commodious and hygienic Leipzig palaces, one is painfully impressed with the poor lighting and bad ventilation at Berlin.

Stumpf is a wonderful man in his field and he keeps pretty close to it, thoroughly German in his specialistic ideas, and with no interest for anything else. His assistant, Dr. Schumann, is an able, industrious and obliging worker, who is sure to rise to eminence in his subject. The laboratory occupies four rooms, dark and cramped for space, but containing several pieces of apparatus of much interest and adapted to the special investigations under way on sound. Some new work on the tendency to group similar objects into units and the influence of this on the formation of judgments of differences is in progress.

The new professor of pedagogy at Berlin was cold, his lectures were

delivered in diplomatic language, containing no new ideas, and he himself was in no sort of rapport with his class.

Paulsen was disappointing. One expects a good deal of such a tremendous physique and that grand, broad head, and he has done great things in his published works; but his lectures on pedagogy, while the best in Germany at present, are just about the same as he was delivering eight or ten years ago. No wonder the professor loses his enthusiasm.

Max Dessoir is a charming personality, a "ladies' lecturer," polished, graceful, always prepared without notes and always with fresh material. He puts one at one's ease immediately, and you feel as if you must have known him before. He practices what he preaches. He was lecturing on literature and spoke of the ideal sort of conversation between those who meet on terms of perfect equality, as in the French salons of last century. Helmholtz's evenings in Berlin were the last thing of that sort in Germany. Our modern use of titles and even the sycophant "*Sie*" in address makes such perfect freedom and feeling of equality impossible. He takes 5-6 hrs. in preparation for every hour of lecture, and never attempts to carry more than seven hours of lectures per week. When he has worked a subject up in lecture form satisfactorily he publishes it, and then does not lecture on it again for some years, until it has sprouted new ideas. In this way he keeps fresh and growing.

Simmel is another of the young docents in Berlin who are doing some original thinking and attracting students by their real merit.

Baginsky is getting out an entirely new edition of his *School Hygiene*. He "just lectures for his own amusement," and does not think as much of other people's work as of that done by himself.

Lassar and Behrends had advertised public lectures on syphilis for students of all the faculties, and one of the courses was held in the great auditorium, capable of seating nearly 500. But both lectures were interspersed with coarse, indecent jokes, and pandered to a morbid curiosity, without one word of awakening to higher views or nobler motives. They were sensational, but in no way pedagogical or inspiring.

Dilthey gives a clear, good note book, as the German student says, and pounds it in with a ridiculously monotonous left-handed gesture. Indeed the automatism of the professors are extremely interesting. Paulsen carries a pencil, which he places carefully on the desk when he begins to speak. In about five minutes or less he picks it up as he would a new thought and plays awhile with it in his hands, and then as carefully places it on the desk again just as he finishes one topic and is about to go over to another. Wundt makes only one gesture, an ambidextral outward movement with his hands as he leans on his elbows. Eucken looks at the ceiling. Richet makes a continuous double-handed gesture of depreciation, as much as to say: "This is all very trifling and trite, I know." Izoulet rubs his hands at the beginning of his lecture as if getting ready to fight, and then holds up his right hand as if he had the thought between his thumb and middle finger. Giard puts his hands behind his back and promenades up and down the platform, looking at the floor. Raymond in Charcot's old clinic in the Salpêtrière holds the idea between the thumb and middle finger of his right hand, and then springs up and down in his chair, as if on horseback, going higher and faster in proportion to the intensity of the idea, and sometimes getting one foot into the seat of his chair and actually sitting on it as on a spring.

Gutzmann (Berlin) is a specialist of international reputation. In his recent pamphlet on early reading he has brought out the same



idea that Dr. Hartwell so graphically portrays in his famous report of 1894; viz., that stuttering increases 3 to 4 fold in the 7th year, owing to faulty methods in school. The phonic methods of Graser and Krug are commended with slight modifications. He has been making some experiments with telephone sounds, and he finds that transmitted nonsense syllables cannot be distinguished. This shows what important apperceptive helps are the context and the overtones. Any one who has had to talk with a foreigner through a telephone will be able to confirm this from his own experience.

Inspector Piper (Dalldorf, near Berlin) teaches feeble-minded children to speak correctly by making them conscious of the right position of the vocal organs, and developing from this a sort of visible speech, simpler than Dr. Bell's. He has recently issued a child's primer on this plan.

E. Pappenheim is the very pleasant and able head of the Kindergarten Society of Berlin. This society very wisely opposes the transfer of the kindergarten to the school authorities on the ground that its methods are not ready yet to be stereotyped, but must have freedom for development, and that is not possible after it passes into governmental control. Child study, Pappenheim says, is the method of developing the kindergarten, but "always let us insist that Fröbel shall be understood before his ideas are modified or developed."

The Hamburg Drawing Teachers' Association is the center just now of the greatest activity in the reform of drawing methods in Germany. They are going at it from the standpoint of child study, and last spring organized an extensive international exhibition of children's drawings in the Kunst-Halle of Hamburg. They have been collecting literature, and have issued several pamphlets, among them one on the developing of artistic taste through the study of pictures in school.

Although Kuno Fischer refuses to have a psychologist at Heidelberg, and although Kraepelin himself declares he is no psychologist, but an alienist, it still remains the fact that Heidelberg is one of the best places in Germany to study psychology. Kraepelin's chief labors during the last ten years have been directed to the problem of mental work, its conditions, individual differences, the influences of drugs on mental activity, and the hygiene of work. This problem of mental work is the essential question in pedagogical psychology, and hence, too, Heidelberg is the best place to study experimental pedagogical psychology. There are two able assistants in the laboratory, one of whom, Dr. Aschaffenburg, has already done notable work in exhaustion, the other, Dr. Michelson, has made new investigations on sleep. The laboratory includes only three rooms, but contains many new and ingenious pieces of apparatus. Dr. Nissl's work in histology promises to be revolutionary of the neuron theory.

Bernheim's pamphlet on "Der Universitätsunterricht und die Erfordernisse der Gegenwart" (Berlin, 1898), touches an important subject greatly needing discussion. The reform proposed is, in brief, as follows: (1) The Private Courses of lectures (*privatim* and *privatissime*) of six hours or more per week should be abolished, and in their place should be substituted (2) Short Courses of orientation (one to two hours), much condensed, giving chief view-points only, with reference to more important literature; (3) Practical Exercises from first semester onward (two to four or more hours per week), to initiate students into general scientific and specialist observation and thinking, and accustom them to clear formulation of their thoughts orally and in writing. The present existing seminars will not be changed in their arrangements, but will be given a firmer organization and strengthened rela-

tions to one another, and to the whole of university teaching. They are all to be arranged in two grades, for beginners (Proseminar), and for advanced students (Seminar), and all will acquire greater importance in proportion as they are pushed into the foreground of university work; (4) combination of systematic presentation with practical exercises, *e. g.*, in archæology and art, history, natural science and medicine by demonstrations, exercises, excursions, etc., in connection with the lecture course. Similar arrangement is possible in the humanities. In the Proseminars the students (a) would learn to consult libraries. "The lack of knowledge of books is really a shameful fact in our academic life to-day." (b) They would come at once into contact with the professors, and would feel the stimulus, and the teacher could the more easily get into rapport with the hearer and advise him, help him to supplement his knowledge where he is ignorant, and test how far his own method of work is pedagogical. (c) They would be much better prepared to enter the seminars, which would thus be raised in grade. Single professors cannot start the reform in practice. It must first be discussed generally, and then introduced simultaneously everywhere. Examination ordinances must require, for doctor's degree and for state examination, the production of work done in each year of university residence, and signed by docents and dated. A year and a half to two years of Proseminar exercises should be required, and one year to a year and a half of original investigation in the Seminar.

Alfred Binet lives in a modest house a short distance out from Paris, and here he works undisturbed, free from any obligation to lecture or examine students, and under no limitations as to work. For, although director of the psychological laboratory of the Sorbonne, he is relieved of all care by his two assistants, and devotes himself entirely to his research work and to publication. It is very different from the work in Germany; for Binet has no seminar, and does not expect to train psychologists. Rather, he has gathered about him a half dozen or so young men who work with him, as if in partnership. The most gifted and prominent of these younger men is Victor Henri, who in every way is Binet's right-hand man. A Frenchman by birth, Henri has spent much of his time in Russia, where he married, and in Germany where he studied with Müller at Göttingen.

Binet & Company are working up individual psychology, and have developed about 70 tests applicable to pupils in public schools. Of these about half are "quite satisfactory." They go every fortnight to two normal schools out from Paris and put the students through the tests. They have been doing this for about two years, and propose to work up the results with reference to seasonal changes and weather influence. Nearly all the tests they commonly use aim to reveal the relation between physiological and psychical functions. Among the usual tests are the following: (1) rank in class, (2) memory for numbers, (3) circumference of chest, (4) height, (5) weight, (6) running time, (7) reaction time (simple), (8) reaction time with choice, (9) counting "petits points," (10) diameter of head, (11) fatigue curve by ergograph, (12) pulse, (13) breathing. They aim also to test the imagination by such questions as these: (a) The teacher takes a square piece of paper and folds it diagonally, and folds the resulting triangle again. Then with the scissors a piece is cut out of the last triangle. Query: what will be the resulting shape when unfolded? (b) A strip of paper is twisted once and the ends pasted together. Then with the scissors the strip is cut around on the middle line. Query: what will be the resulting form? If the resulting ring is similarly cut along the middle line, what figure will

result? The pupils are also asked to describe simple objects distributed to them, *e. g.*, a pen, or a double sou. Lately the camera has been used to photograph automatisms. It is proposed to publish the results of these studies in a new series under the title *Bibliothèque de Pédagogie et de Psychologie*. The first volume of this series is out: *La Fatigue Intellectuelle*. The second is announced on *L'Education de la Mémoire*.

Théodule Ribot, although associated with the Binet school, is an independent worker, and undoubtedly the most reliable and ablest psychologist in France. There is considerable jealousy between the two parties, and neither thinks very highly of the other's way of working.

Ribot was born in Brittany in 1839. He is short, frail looking, with little, nervous twitches of the head and eyes. In answer to the question, why don't the French do more work in psychology in the university? Ribot replied that the work in the psychological laboratory did not count toward the degree, nor was it included in any examination for the degree. Secondly, the French have not the perseverance and patience necessary to accurate introspection. Ribot says that, at the Collège de France, he must count on the usual point of view of his audience being that of logic and intellect. They do not comprehend the emotional life, and would not understand him if, as he would like, he should address them from the standpoint of the emotions. He has, however, great hopes of the advance of psychology by the study of the sentiments and feelings. The most promising field in psychology at present is that of attention. There are many fundamental questions raised by Wundt's position, by Münsterberg, by James, and others, but much can also be solved by experiment.

Jules Soury is also an independent worker, lecturing on psychology in the Ecole des Hautes Etudes. Perez, who used to write so tediously on child study, has become a melancholiac in an asylum outside of Paris. Buisson is doing very good normal school work in pedagogy at the Sorbonne, reading educational classics, and having essays written on them.

Having opportunity to accompany one of the medical inspectors on his visit to the schools, I saw something of the surface routine. Dr. Mangenot has drafted a project of a law requiring daily visits and individual examination with separate individual bulletins for each pupil. All the pupils are to be weighed and measured twice a year. These data are to furnish the basis for indicating to the teachers (1) how to seat the pupils, (2) which to relieve of home-work or gymnastics, (3) which need medical attention outside, (4) which need "preventive medication" (*i. e.*, supplement to home diet, *e. g.*, cod-liver oil, etc.), (5) which pupils should join the "colonies scolaires."

Izoulet was lecturing on Rousseau to crowded audiences of students, society women, professors and men of affairs in the Collège de France. There were many demonstrations of approval and disapproval. "Under the old order of things, men were chosen by aristocracy of birth; under the new order on the basis of a diploma by examination. *But only the mediocre pass an examination.* Original thought does not help one to pass. We are training for mediocrity."

In the art academies of Paris all students, beginners as well as veterans, drawers in charcoal as well as painters in oil, and modellers in clay, work from the human figure. Nothing else is so interesting, so adapted to all stages of progress, so readily criticised and mistakes so clearly felt and appreciated. On the Saturday visit of the professor, the weekly sketches are criticised and marked. Among these are often to be found excellent pieces of work, with much simplicity and depth of feeling.

An exceedingly interesting and valuable work is being done by Dr. Edgar Bérillon in his Institute in Paris, where he cures common faults of children, *e. g.*, onychophagia, onanism, lying, laziness, fear, etc., by the method of suggestion. Every teacher must be struck by the proposition laid down by Bérillon that educability is measured by suggestibility. What an unused power in the school room, where the ideal so often is to reason and to compel by authority. (*Cf.* article on "The method of suggestion in the cure of faults" in the May number of the North Western Monthly.)

Sir Joshua and Lady Fitch were charming in their hospitality, and eager to show their warm interest in everything relating to American education. Fitch's new book on "The Arnolds" is worthy of his former fame and has received the most diligent care and study in its preparation.

Whether on such a flying trip you get much or little from a man depends on how you approach him. If you have read any of his writings, you have the key to his heart. Nothing perhaps pleases a man more than to be sought out by one of his unknown readers and find that his thoughts have taken root and awakened interest. I have never found any one unwilling to talk about his published writings, their prospective new editions, and their circulation in America. It makes a great difference also whether you know anything of the man's work and line of interest, and whether you have done any study along that line yourself. Professors are generally pleased to discuss their ideas with intelligent and interested fellow-workers.

Prof. Sully has a grand opportunity if he will rise to the occasion. The child study people in England are looking to him for leadership, and there is no one in whom the teachers seem to have more confidence. He has it in his hands to develop the subject as he thinks best, but he has, unfortunately, been prevented by ill-health from taking a prominent part of late in the British Society for Child Study. It is high time that the development of sagacious and fruitful lines of investigation was lifting the work from the low plane of scrappy, rambling anecdotes. Such leadership requires boldness and insight. Prof. Geddes, of Edinburgh, has the qualifications, and if he were to throw his whole interest for a few years in that direction Great Britain would soon be doing as much as the United States; for the interest is present but a leader is as yet lacking.

The Teachers' Guild in Gower Street, London, is a center for information about education. Amongst the interesting things in the library and pedagogic museum is a recently published portrait of Pestalozzi, discovered by Mr. Russel on a trip through Switzerland. It seems to be a pencil sketch from life, with a great deal more life and truth in it than any of the older pictures.

The library of the Education Department formerly in the South Kensington, has moved into new quarters in one of the side streets off from Whitehall. The department of Special Inquiries and Reports is organized under Mr. Sadler and Mr. Morant on the model of our own Bureau of Education. They have begun the publication of these reports, the first volume appearing about a year ago, and the second volume being now due.

Interest in England at present centers in the organization of Secondary Education. Shall it, like elementary education, be centralized? If so, what shall be the constitution of the new central authority? Shall it be professional or political?

Dr. Warner is the champion of the study of the child "as a natural object by the laboratory method." His new edition of "How to study children" is intended to be put into the hands of teachers and parents. He has in MS., awaiting publication, another book on "Natural His-

tory and Child Study," a manual for teachers in training. Furthermore he has in contemplation a philosophical work in two volumes to cover the whole ground of child study and unify all that is known about children. He expected to come to this country in the autumn to lecture and examine children and report on them.

James Ward was an early champion of the new psychology when fresh from Leipzig in 1876, and urged Cambridge to found a laboratory. But Cambridge laughed at him, and is only now beginning to take it up in earnest. Meanwhile Ward has drifted into metaphysics and is now deeply immersed in the theory of knowledge and does not keep up with the work elsewhere in psychology. Two of his pupils are rising into prominence—Mr. Stout, now at work on a new genetic psychology, and W. E. Johnson, who is turning his attention to education.

Newnham College has a daintily arranged, well-lighted, new library building just completed, the gift of the Rev. Mr. Thompson.

Ebenezer Cooke, the author of the *Alternative Syllabus in Drawing in the English Code*, is a very interesting man. Rustic in appearance, with no higher education, although a pupil of Ruskin, a plain, homely man, by himself he is working out his subject by observing children without concerning himself much with what is being done in other countries. All of the brush-work ideas advocated by Mrs. Rowland Hill in England, and by Mrs. Ella Goodwin Hunt in this country, are taken from Cooke without any acknowledgment. Cooke caught the idea from observing Jack L— playing with a brush, accidentally making an elliptical "blob," and then adding ears, tail and legs to make a mouse. The boy was so delighted with his discovery that he covered the paper with "blob" mice, and Cooke was equally delighted with his discovery, and incorporated it as the corner stone of his course in brush-work. Cooke believes in drawing from memory and imagination first before drawing from the object, thus emptying out one's misconceptions in order to get ready for learning. He is fond of quoting from Pestalozzi: "All true educative instruction must be drawn out of the child, and be germinated within it."

Prof. Patrick Geddes, of Edinburgh, is one of the most genial, original, and fascinating men I met anywhere. He is in the prime of life, forty-four years old; has had a broad training in biology, working with Darwin and Huxley, and studying in England and on the continent; has turned to sociology in his spare time, and brought into it the biologic standpoint. For three months he is professor of botany at Dundee, but for the rest of the year he resides in Edinburgh or travels. His sociologic work is extremely interesting and unique. For a while he lived with his wife in a one-room flat in the slum district of old Edinburgh. There he learned to know the needs of the poor and their privations, as well as the remedies and the possibilities for the rejuvenation of the Old Town. Eleven years ago he began University Hall, which has grown to embrace Ramsay Lodge, Riddle's Court, Blackie House, St. Giles House, and several others, accommodating more than two hundred souls. Besides this he has renovated or built eighty-five artisans' dwellings, and the Old Town is fast changing into one of the most respectable sections of the city. Property has greatly appreciated in value, and Geddes has now turned the enterprise over to a stock company called The Town and Gown Association, Limited. His idea is that higher education ought to train captains of industry who can lead the material forces into productive channels. The germ idea of University Hall is an organization of higher education, "to flower as many species of genius as possible," retaining in mutually helpful association young artists, lawyers, physicians, accountants, teachers, historians, architects, engineers, etc. For, they all contribute in their respective spheres that in which they

are experts. These people ought to be fellows or docents in the University of Edinburgh. They would contribute strength and the University would extend its influence in their lives beyond the mere lectures and examinations. This is what Geddes does in his "University," which is a self-governing republic of higher education. University Hall is chiefly scientific and literary; the new Observatory, the new Asylum, the geographical society and Museum of antiquities furnish new centers of scientific and potential collegiate development.

The tutorial assistance and higher studies immediately connected with Geddes's work are centered in the "Outlook Tower," the home of the Edinburgh Summer Meeting. Here are grouped: (a) geography, history, and social science with the co-operation of British and foreign geographers; (b) Scottish and Edinburgh history and Celtic studies; (c) Educational Museum; (d) Old Edinburgh School of Art, adapting old Scottish and Celtic designs to modern industries, decorating the students' halls, and preparing plans for a national monument in the form of a frieze representing a Procession of the Historical Personages of Scotland from the year 1000 to 1745; (e) the Publishing House of Patrick Geddes and Colleagues.

The false analysis of culture elements is destructive and vicious, like the analysis of foods into C, S, Ph, etc., or into carbo-hydrates and the like. These are not foods, but the symbols of hades and death. Much of so-called biology is really necrology, for it is the study of death. The specialists in science are at the ash-heap of culture—the dead past. One rag picker finds old glass and china—that is the archaeologist; another rakes up some fish or chicken bones or some feathers—that is the anatomist à la Prof. Huxley; another finds some stale flowers or dried leaves—the botanist; another some half-burned coal or slate—the geologist; charcoal and some sulphur are picked up by the chemist; letters and scribbled MSS. are raked out by the historian; and the antiquarian finds some old clothes, tin cans or bits of furniture. On the other hand, how different is real culture, not analytic but synthetic, not of death but of life. Give the children food instead of charcoal or carbo-hydrates. *Vivendo discimus*. Education arises out of life. Pupils must be fitted for the activities of life by actually sharing them; e. g., school accounts, book-keeping, decoration of school building and school grounds, etc. Cecil Reddie's school at Abbotsholme, England, is working out its salvation inspired by these ideals. The individual and competitive spur to study becomes more than replaced by the co-operative and social one. Education is not merely by and for the sake of *thought*, but in a still higher degree by and for the sake of *action*; hence each course of scientific study is not merely related to those dealing with the other sciences, but in even more immediate degree to the corresponding arts of life. In the school of the future, as in the old churches of the Middle Ages, the books will be few but the pictures well-nigh infinite.

How shall we reach the fuller perfection of the human hive? The proper relation of man to woman is best expressed in chivalry—the provisional religion of Western Feudalism. The boy's sword and the girl's doll furnish the starting point for the educator. Let the boy have his fling with war and fighting. Better there than afterward on Kaiser's throne or in the senate chamber. Every age of chivalry follows a period of decadence. The evolutionist education aims at the remoralization of the sexes. Its ideal is "women strengthened and trained by men, whom they have trained and strengthened."

The spirit of Geddes's ideas on education is best obtained by reading "The Evergreen, a Northern Seasonal" (Patrick Geddes and Colleagues, Edinburgh.)

HERMAN T. LUKENS.

## LITERATURE.

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### *An Autobiography.* (Gottfried Keller).

Psychologists and Pedagogues have at all times highly esteemed autobiographies written by great men. Not to mention the innumerable "Journals" which have been read with great interest, especially when one encountered therein some extraordinary character, as for example that of Marie Bashkirtseff, documents of real value have been presented in the *Confessions*, by Rousseau, *Dichtung and Wahrheit*, by Goethe, *L'Histoire de ma vie*, by George Sand, the *Autobiography* of Stuart Mill.

The object of these pages is to speak of another book which has been well known in Germany for many years, although scarcely appreciated by any other but literary people. It is "Der Grüne Heinrich," an autobiography of the great Swiss novelist, Gottfried Keller, who died in 1890. This book is worthy of the special attention of all those who are interested in the psychology of children. It is impossible for me to treat "Der Grüne Heinrich" in full here, and I can only present the character of the work in a few words.

First of all, something about the author. Gottfried Keller was born in Zürich, on the 19th of July, 1819. When he was five years old his father died. In accordance with his father's special wish the boy was first sent to a free school (*Armenschule*)<sup>1</sup> and, later on, to a manual training school. After having been expelled from school because he had taken an active part in the revolt of a class against an unbeloved teacher, he took up painting under a so-called artist, who then lived in Zürich. Later on he continued under a better master, his intention being to become a landscape painter. At the age of twenty he went to Munich, but returned three years later without having been successful in his work. He then received a scholarship from his native canton, which was to enable him to travel in the Orient, after a year's preparation in Germany. Keller was so much pleased with the latter country that he remained there; first at Heidelberg, where he attended the lectures of Hettner, on Literature, Esthetics, and on Spinoza; those of Ludwig Häusser on the History of Germany, and the famous lectures of Ludwig Feuerbach, in the city hall, on the Essence of Christianity (*Wesen der Christentums*). Then he went to Berlin, where he was very frequently seen at the theater. In 1855 he returned to Zürich where he lived in poverty. In 1861 he was elected secretary in the employ of the State (*Erster Staatsschreiber*). In 1876 his literary greatness had at last been recognized. He then resigned his political office. He died on the 15th of July, 1890, mourned by all Germany.

Keller's works consist mainly of short stories in which he sets forth his philosophical ideas. He is a most minute and perspicacious

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<sup>1</sup>*Armenschule*: A school where pupils paid no tuition. Such schools were rare at that time and were attended generally only by poor peoples. The one attended by G. Keller had been founded in Zürich by some devoted citizens in the year 1786.

observer. He looks upon the world from the standpoint of sound realism.

He makes this concession to idealism, that there is in man an impulse to do what is right, but it is immaterial to him whether that impulse is indirectly of utilitarian origin, or whether it is aprioristic. It exists, it is *real*, and consequently it belongs to realism as much as it does to idealism. But when he asks where the good is that he is striving to reach, and what source it springs from, he pronounces himself very decidedly against idealism. The good to which man can aspire is in nature, on earth; it is there that he must look for it, and not in heavenly regions. In a very charming but merciless way, he makes fun of the idealists, and shows how their theories lead either to the ridiculous, or sometimes even do serious harm. He goes still further in saying that, even if the idealists at times offer something good and wholesome, this is simply borrowed from realism and presented under another name. As an example he gives some of the most beautiful Christian legends, and shows that Heaven itself is only a combination of elements taken from reality, combined by the imagination of man.

In speaking of *Der Grüne Heinrich*, it must be said that the book is not wholly a truthful narrative of the life of its author. To give only one example: Keller says nothing about the existence of his sister. Such omissions and other changes, although not strictly in accordance with reality, are admissible, since they give a literary and artistic form to the work; they take away nothing from the psychological truth, and it would be childish to contest the value of "*Der Grüne Heinrich*," to the philosopher, on account of these trifling alterations. On the contrary, thanks are due the author for not having detracted from the psychological value of the work by an accumulation of facts of no importance.

Keller's greatest peculiarity, which distinguishes him from most of his great predecessors, is, that he presents the biography of an entirely normal child. Goethe gives us the development of the childhood of a great genius, and moreover the title, "*Poetry and Reality*," indicates that the poet has added fiction to his narrative. With Rousseau and Marie Bashkirtseff we have the psychological conditions of two hyperæsthetic beings. But *Der Grüne Heinrich* is a boy scarcely different than his playmates. In spite of his intent for art and his love of nature, the reader realizes that he is not dealing with a child more intelligent or more sensitive than the average. It is for this reason, that the reader who cares little for fiction, and who takes special interest in no morbidity, will find *Der Grüne Heinrich* most congenial reading; he seems so near us because we understand him so well.

Not only is the character of the child in question absolutely normal, but also the conditions under which his childhood and youth are spent, are in no wise extraordinary. No attempt is made at a special system of education; it is the same to which most children of that time were subjected, and which we are now trying to reform. Again, no *one* particularly strong influence is apparent, which might in one way or another have influenced the spontaneous disposition of the child. It may be claimed that the loss of his father at the early age of five years is something out of the ordinary. Perhaps. But on the other hand it must be remembered that, in Europe, the authority of a father is very often of a despotic kind, and was still more so forty or fifty years ago. It consequently killed for most time the spontaneity of the child.



Attention may here be called to the striking contrast with the autobiography of Stuart Mill, where we have an education which was entirely *sui generis* (tyrannical authority of his father), and brought about the most happy results.

In finally comparing Keller's autobiography with George Sand's, we shall find nothing but contrasts: home surroundings, character, primary instruction and education, all is as abnormal with George Sand as it is normal with Keller.

Keller's book may be divided into two parts; the first treats of his childhood and youth up to the age of eighteen years, the second tells us of the experiences of a young artist in a foreign country. Only the first part is of true pedagogical value. There we find the thoughts, the impressions, the emotions, the longings of a child, at home and out with his playmates, at his games and at school, all rendered with admirable fidelity and minuteness. (I should like to mention the description of the school founded according to the principles of Pestalozzi and Lancaster, Part I, Chapter XV.) One readily understands his deep resentment at the injustice done him, when those with whom he comes in contact judge him as though he were an adult, or according as they would judge children of a disposition different from his. We are present at the founding of the little friendships and hatreds of his early years; back of these we will always discover some utilitarian motive. On the whole, all is based upon little things: the most insignificant causes often result in the most complex effects which the child was unable to foresee and which often frighten him. He frequently acts without knowing why, sometimes in direct opposition with a very clear intention, and prompted simply by circumstances wholly accidental which appear at the fatal moment.

The development of the religious ideas of the child is given in a most interesting manner. Sometimes he thinks God must be like the weathercock on the church steeple, remaining lighted up when all the rest of the world is already in darkness; again he is like the terrible tiger in his picture book. Only gradually does he grasp the idea of a Heavenly Father, to which he is led by the manner in which his mother speaks of God. When left alone the child thinks very differently: God then is a Being of whom he thinks without cease; the fact that this remains without any result, annoys him, and he becomes disgusted and is even blasphemous. Sometimes, however, the idea of a Heavenly Father presents itself again; it is when he feels the *need* of help in the sad moments of his life, and in the hours of despair.<sup>1</sup> But the origin of the idea is wholly selfish, and it remains so even as he grows older, when the young catechumen has reasoned into nothing his religious instruction in its three parts treating of Sin, of Faith and of Love. Reason finds satisfaction only in the idea of the Spirit which embraces all, which animates all. "God seemed to me not spiritual, but a worldly spirit, because he is the world and the world is in him. God is radiant with worldliness." ("Gott Strahlt von Weltlichkeit.") God and nature are one to him. As for immortality, he has no faith in it; only on the day when the woman he loves dies, he *wants* to believe in it in order not to be forced to accept the thought of a separation forever.

Another psychological point which Gottfried Keller treats is the

<sup>1</sup> *Note.* The theories of the Theologians upon the origin of man's idea of God and the unclear conception of religious sentiment proposed by modern Ritschlianism in Germany, seem very small by the side of this luminous exposition by means of facts, of the formation of religious ideas in us.

two kinds of love which spring up in the child's heart, ideal and sensual, entirely independent of each other. Der Grüne Heinrich experiences two distinct kinds of love, one for a young, innocent and pure girl, the other, already aroused within the child in the guise of vague longing, is for a superb young woman some years older than he, the very personification of sensual although not impure love. The chapters treating of this are admirable. There are two personalities in the child, and Heinrich knows it and often thinks about it; it troubles him; the duality within him is repugnant to his *reason*; he should be but one, that would be more worthy of him. And this thought, of purely intellectual origin, constantly takes hold of him with greater force up to the day on which he loses the object of his chaste and ideal love. He determines to remain true to her only. But nature defies reason, and when he hears that the other woman he loves has left the town, it is a terrible blow to him. I know of no other example in the literature of any tongue, where the idea of such two simultaneous loves is so truthfully and successfully set forth, and with such perfect tact.

Keller offers no advice, no theories in his books. But he gives an ample harvest of minute and sagacious observations. It seem to me—but this is only a personal opinion—that, in looking upon the recent progress of the new pedagogy, "Child Study," as it is called, such precious contributions as the work of which I have been speaking, are too often overlooked or forgotten.

A. SCHINZ.

*La Fatigue Intellectuelle.* Par A. BINET ET V. HENRI. Avec 90 figures et 3 planches hors texte. Paris, Librairie C. Reinwald. 1898. 336 pages.

This volume is the first of a series of books to be published in France: the *Bibliothèque de Pédagogie et de Psychologie*. We welcome this publication with great pleasure. Does it not mean that scholars abroad recognize the value of the researches first undertaken by American Pedagogues, and of which our Review, more than any other, is the special organ? Let me quote some lines from the Preface. It will be seen at once, that the end strived after in Europe, and especially in France, is a principle which has long ago been recognized by American students of pedagogy as the only fertile one. "The old pedagogy, in spite of many good details, must be given up entirely, because it is radically infected by error: it was constructed with artificial brilliancy (*chic*), it is the result of prejudiced ideas, it is without any real foundation, it substitutes literary quotations for strictly scientific demonstrations, it decides the most important problems by referring to authorities like Quintilian and Bossuet, it replaces facts by exhortations and sermons; the word which characterizes it best, is "Gabble" (*verbiage*). The new pedagogy must be based upon *observation* and *experience*. First of all it must be experimental. We do not mean here by experiment, vague impressions gained by persons who have seen much; an experimental work, in the scientific meaning of the word, is such, offering methodically collected documents, and, moreover, documents reported with sufficient precision and details as to make it possible to do the work of the author over again, to verify it, or to draw conclusions at which he did not arrive." (Pp. 1, 2.)

As a proof that the old methods are as pernicious as the authors claim, they give, in the first chapter, a report of the discussions held in 1886 and 1887, at the Academy of Medicine in Paris, in regard to the question of mental overwork (*Surmenage intellectuel*).

We must first of all define the term "Mental work." The book being a pedagogical work, the authors mean by mental work "all kinds of work done by pupils in school, either during recitations or during study hours." (P. 24.) The different kinds of work demanded of persons experimented upon, are: (1) mental arithmetic; (2) the recitation of a certain number of figures from memory; (3) reading. Other experiments, such as the recollection of some past occurrence, the exposition of a philosophical system, etc., are not considered wise, since they are too liable to bring in foreign elements, such as the searching for choice words, and so on. The book is divided into two parts:

*Part I. Physiological Effects of Mental Work.* I cannot make mention of all the results arrived at or reported by Binet and Henri. I shall confine myself to such as seem most striking to me. I pass over the experiments made by means of the Sphygmograph in order to establish the effect of mental activity upon the heart (the rapidity of pulsation, the rhythm, the propulsion strength of the blood). In the chapter on *capillar circulation*, the experiments made by Mosso and F. Franck are discussed at length. The results of the experiments made in the laboratory of Paris have been published previously in the *Année Psychologique* II and III.—The recent experiments of Patrizzi, referred to on pp. 82-3 must be noted here. They deal with the influence which the quantity of blood in the brain has on the rapidity of reaction. A boy with a gap in his skull served as a subject for Patrizzi to notice the time of amenia and hyperhemia of the brain; he gave the boy the sign to react while in the state of amenia, and again when in the condition of hyperhemia; and the result was, that the quantity of blood in the brain had much less influence on psychic phenomena than is often supposed.—The question of the relation between circulation in the brain and circulation in the body in general now presents itself. In his book on *Fatigue* Mosso states that there is a sort of antagonism, or inverse relation, between the two circulations. He abandons it in his more recent book on "The Temperature of the Brain," (1894). It seems to me that Binet and Henri are here and elsewhere rather severe on Mosso, whose book they call "a work of vulgarization." This is not wholly just. Binet himself admits that the theory of the antagonism, the first theory of Mosso, cannot as yet be considered as definitely refuted, and it is not impossible that this theory may reappear, varying but little from its original form. There is no reason why I should dwell upon this discussion; I wish to refer, however, to pp. 168, 284, 296, and to Chapter VIII in Part II, where we find very important facts which are far from contradicting the theory of inverse relations. On page 296, for example, we find the result obtained by Friedrich. A dictation was given to a class before it took its lesson in gymnastics; the number of mistakes made by the whole number of pupils was 62, while in a dictation given after a lesson in gymnastics, 152 mistakes were made, which is a greater number of mistakes than was noticed after an equal time devoted to mental work.—Nothing special is to be said as to the influence of mental work upon the circulation in the hand; nor of its influence on the blood pressure (Chapter III).—In the chapter on the temperature of the body in connection with mental work; (a) peripheric; (b) central, I only notice one result which seems certain; it is that the height of temperature during or after mental work is greater, sometimes by several degrees, in the left part of the brain than in the right (p. 135).—Chapter V deals with breathing. Here may be seen a very important practical result: the great difference in the amount of carbonic acid produced, according to the different kinds of work.

(See pp. 162-166.) The problem of the ventilation of school rooms should be based upon a precise knowledge of such difference. What a vast field of researches for people anxious to show that pedagogy is founded on psychology, and often on experimental psychology! One single and only very rudimentary experiment has been made so far. It is by Liebermeister, who obtained the following results: in  $\frac{1}{2}$  hour of quiet repose, a physician 42 years of age exhaled 15.6 gr. of carbonic acid; in  $\frac{1}{2}$  hour of singing, 20.8 gr.; while reading, 18.7 gr.; while sleeping, 12.3 gr.

In Chapter VI we see the effects of mental work on the muscular strength. This, as well as all the preceding chapters, is a very good summary of researches made up to the present day. Among others, the authors summarize the experiments made by Heinrich and Mentz on the diameter of the pupil of the eye, and of Heinrich on the crystalline of the eye. The pupil expands as a result of mental work, or when the eye is used in indirect vision; and the radius of the curve of the crystalline grows larger in indirect vision, or as a result of mental work. The researches of Mr. Dougall (*Psychological Review*, March, 1896), on the relaxation of the fingers during mental circulation, are also alluded to. The instruments used are, among others, the Dynamometer and Ergograph. I call attention to a long criticism of Mosso's Ergograph (pp. 178-189),<sup>1</sup> which the authors, however, admit to be a useful instrument (p. 184). Finally, a very interesting discussion of the hypothesis of Kraepelin and Koch, that the height of the lifting with the ergograph depends upon the condition of the muscles, but the number depends upon the central neural system (p. 187 ss.).

Chapter VII. On Nutrition. Here, again, the experiments made so far are few in number; and yet it would be very useful to know more about this special subject. One result seems positive, namely, that the amount of food consumed by a person diminishes when he does mental work. In the Normal School of Mirecourt (France), the boys consume, on an average, 750 gr. of bread per day, girls 550. At the end of the school year, boys consume about 200 gr. less, and girls 100. It is very probable that this diminution is due to school work, since the statistics on the alimentation of imprisoned women, also show variation, though not regularly between the month of October of one year to July of the next.<sup>2</sup>

*Part II. Psychological Effects of Mental Work. A. Laboratory Researches.* Almost all of those given, have been made by Kraepelin. The six kinds of experiments made are: 1. the counting of letters in a text printed in Latin characters; 2. addition of numbers of one figure; 3. writing of dictations; 4. reading aloud; 5. recollecting a series of figures; 9. recollecting syllables. There are two main factors to be considered: *exercise* and *fatigue*. According to Oehrn, the collaborator of Kraepelin, the first factor increases the rapidity of work, the second diminishes it. One or the other predominates—at first exercise is stronger, later on fatigue. The difference in individuals as well as the difference according to the kind of work, are the object of numerous experiments referred to by Binet and Henri. Our authors give a method which renders the comparison of the different results possible (pp. 252-8).—In Chapter II the subject is continued, and we see the factor of exercise acting after very long periods of rest or intermission. Oehrn claims that, only after 47 and 72 hours of intermission, he found a loss of influence of the acquired exercise upon mental work (p. 264).—Chapter IV is devoted to the report and examination of Bettmann's experiments on the time of reaction, on the rapidity

<sup>1</sup> For more details see "*Année Psychologique*," IV year, 1898. Pp. 253-267 and 303-316.

<sup>2</sup> For more details see "*Année Psychologique*," IV year, 1898. Pp. 337-356.

with which additions were made, and the memory of figures; *a.* without preceding periods of work; *b.* after physical exercise; *c.* after mental work.

*B. School Researches.* Chapter V: Method of Dictation (especially Friedrich). Chapter VI: Methods of Calculation (especially Bergerstein). Chapter VII: Method of recollecting figures, and method of combination. These methods were used by Ebbinghaus in the experiments which the Mayor of Breslau ordered to be made in 1895. Psychologists have already said much about these inquiries. I therefore need only to state that Binet and Henri offer a thorough criticism of the whole work directed by Ebbinghaus.

Finally, in Chapter VIII, we have the "Method of Tactile Sensitiveness." The determination of the feeling of the distance of prickings before and after mental work, on different parts of the skin.

In the last chapter the authors fully recognize that there are but few practical conclusions that can be drawn from the experiments made up to the present time. This is the reason why the different topics treated have been taken up again. It seems to me that the authors succeeded very well in doing the pioneer work which they had proposed themselves. For in each chapter of this valuable study on fatigue, one can find the clearest and most suggestive exposition of the question such as it presents itself at the present moment. I should dwell longer upon the skill of the authors of advantageously treating the scarce material at their disposition, of combining the results, and of suggesting new experiments; but this is unnecessary, since their reputation has been established long ago among psychologists.

I should like now to remind the reader of the advice Binet and Henri give, and which ought to be remembered in every study upon this subject. "Fatigue brought about by a lesson, is a natural effect; it must come if the pupils have been attentive, since every effort is accompanied by a certain amount of fatigue. . . . One might even make the paradoxical statement, that it is only in fatiguing ourselves, that we can develop ourselves physically as well as intellectually. It is over-fatigue which does harm, not natural fatigue; a good book might be written, entitled: "The Necessity of Fatigue for Physical and Intellectual Hygiene." (Pp. 302-3.)

ALBERT SCHINZ.

*Work and Play in Girls' Schools*, by DOROTHY BEALE, and Others. London, 1898. pp. 433.

The Principal of Cheltenham, H. M. Soulsby and Jane F. Dove, also head mistresses, have here gathered, edited, and prefaced some two score of brief papers, grouped in four parts—humanities, mathematics, science and æsthetics,—with a brief concluding paper on moral and physical education. The many writers seem to be all practical teachers of girls with high ideals, and the papers altogether constitute one of the sanest and most comprehensive presentations of the ways and means of educating maturing girls, we have. All interested in the subject should read and ponder its contents.

*The Gods of Our Fathers*, by HERMAN I. STERN. Harper & Bros., New York, 1898. pp. 269.

This is a study of Saxon mythology, which digests and sets forth in very presentable style the legends of the formation of the world, the gods and their abode, Queen of Asgard, Loki and his brood, giants and dwarfs, Thor's adventures, the golden age of the gods, Balder's death, the twilight of the gods. It is a work that every student and teacher of mythology should possess.

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## EDITORIAL.

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In the first article Dr. Gulick urges that modern religious life and ideals for adolescents are introspective of states and not active enough. In the church we hear of rest, joy, peace, meekness, non-resistance, trust, love to God, hope of heaven, resignation, etc. These are feminine and not masculine traits, and our churches are less and less marked by aggressive, heroic, and objective endeavors. The pride and flower of American young men stand outside and not inside the church, and most members and workers are women. The lives that appeal to young men are Washington, Lincoln, etc., who were not leaders in church and religion. The Young Men's Christian Association stands too much for subjective things, and so it and Bible classes do not represent the best element, which is always attracted by great expenditure of energy. The qualities indigenous to the Anglo-Saxon youth are perhaps best seen in group-games, involving passionate subordination of individuals to the college team, captain, etc., and these best of all our qualities are given little field in religious work.

Professor Monroe attempts to trace the rise of the money sense in children and to compare it with the same in primitive man. His method was by the questionnaire, and showed a marked rise at puberty in the per cent. of both girls and boys who would save their money. Property seems to have originated in the storing up of food. Many interesting suggestions

on the cultivation of thrift occur, and school savings banks are strongly commended. A bibliography is appended.

Mr. Sears prints a more extended survey of recent literature and problems connected with home and school punishments. Its object, what it does, its many forms and kinds, what offenses are punished, tasks and penalties, uniformity of punishment for the the same offense, making the penalty fit the crime, discipline of consequences and its limits, breaking the will, lapse of time between the offense and the punishment, and slight but sure punishments, are discussed on the basis of the questionnaire returns and recent literature upon the subject, which is copiously cited at the end, and practical conclusions drawn.

The teaching instinct, its origin and its psychology, is investigated by Mr. Phillips. Teaching and leadership among animals, incentives to good teaching, cases of an innate passion for teaching and its analysis, are discussed. It is explained as an expression of the ripened impulse to parenthood, school-making is a kind of nest-building, and teaching is mind-feeding. The lives and motives of great teachers, Jesus, Socrates, Arnold, Comenius, Pestalozzi, Froebel, Fellenberg, Lancaster, and Francke are discussed to show that philanthropy and interest in the species was at the root of their endeavors. The incentives to teach, how far the teaching instinct can be given or improved by training, how far the impulse to communicate may be akin to the impulse of God to reveal himself—these and many other questions are considered.

The reviews and digests of current educational literature are unusually extended in this number, comprising over fifty recent publications.

## PSYCHOLOGICAL, PEDAGOGICAL, AND RELIGIOUS ASPECTS OF GROUP GAMES.

By LUTHER GULICK, M. D.

Young Men's Christian Association Training School, Springfield,  
Mass.

This article is an attempt to correlate and suggest the direction of several studies now making. It aims at suggestiveness rather than at conclusiveness. It presents chiefly summaries, conclusions and outlook. The studies relate

(a) To the psychology of play, particularly the plays of Anglo-Saxon adolescent males.

(b) To the relation of these play instincts to the serious business of life, and particularly to the higher social and psychical function of living.

(c) To the ways in which the truly religious life of service to humanity may be best initiated and fostered in the boy.

(d) To directions in which organizations for fostering the religious life may well direct their activities.

If there are assumptions in the article that seem too great for the facts presented, the reader can only be referred to these studies that it is hoped can be published at no very distant date. These studies will include such bibliographical and statistical matter as will make evident the strength or weakness of the positions taken.

It is our purpose to examine the characteristics of the Anglo-Saxon, and to attempt from this examination to state in what directions the highest life must show itself. This highest life must be fostered and included by the religious life.

By Anglo-Saxon, I mean people, not necessarily of Anglo-Saxon blood, but of Anglo-Saxon tradition and psychical inheritance. We are an Anglo-Saxon people, for our dominant inheritances belong to this group rather than to those of the Romance line. The fact that we have parents from other lines does not alter the fact of which I have spoken.

It is proposed to limit our inquiry to a single phase, a single method. The application of this method to a wide range will be evident at the conclusion. We propose to examine the characteristics of the Anglo-Saxon young man, as shown by his spontaneous plays, particularly his neuro-muscular plays.

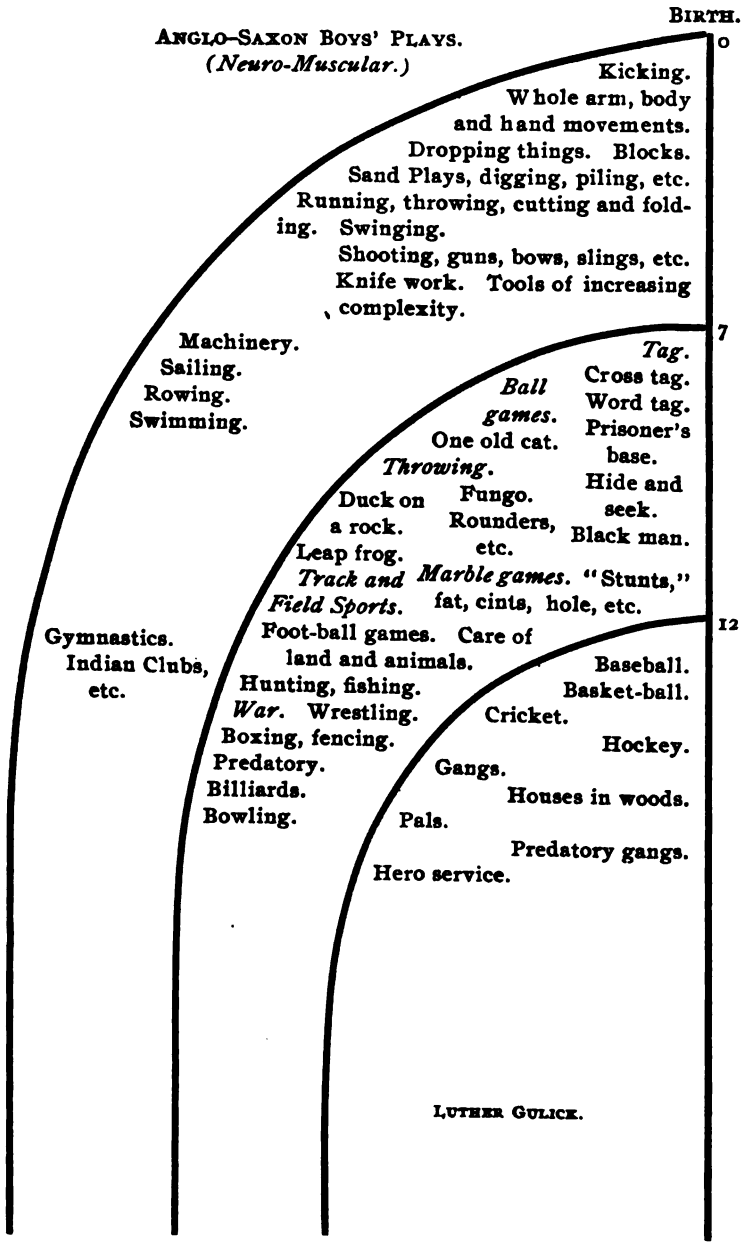
The chief interests and activities of the young of all races,



and of the higher animals, center about play, and in no other direction may we expect to find dominant characteristics exhibiting themselves with the power and clearness we may in this spontaneous play life. Thus, it may be that we can get important light in regard to the dominant characteristics of the Anglo-Saxon young man by making careful observation of his plays. We shall observe any divergence that there may be between the plays of the Anglo-Saxon and Romance peoples on the one hand, and between men and women on the other. We shall observe the progressive character of the plays through the life of the individual. I shall also take occasion to briefly suggest some of the more important contributions in modern psychology that bear upon the problem.

Attention is called to the accompanying chart, entitled "Anglo-Saxon Boys' Plays." By this title it is not meant that these plays are exclusively carried on by Anglo-Saxon boys, for they are inclusive as well as differentiating. The chart is to be read from above downwards. It starts at zero, birth, and terminates at adult life. Its usefulness must depend entirely upon the general characteristics exhibited. Psychological facts, such as we are dealing with, cannot be represented in a graphic way so as to be complete in details. For instance: the lines starting at the right of the chart, at the years 7 and 12, are only approximate. In some individuals these lines should be two or even three years earlier, and in others correspondingly later, than we find them on this chart. Then, again, there is no sharp division between the plays in the three groups, as shown by these two lines; they shade into each other. That which we attempt to characterize by these three groups are the chief interests of the period. I have attempted to arrange them in a somewhat psychological order, but even in individuals, this varies so that only the progression from simple to complex as a whole can be accepted as expressing the thought.

All will recognize in the characteristics of the group given on top the plays of babyhood and the first years of childhood: the spontaneous kicking of the baby, the movements with the whole arm — often symmetrical — the bodily squirming and movement of the baby; the hand movements, the clasping movements, the movements of the head; all seem to form the play life of the baby. The baby rapidly progresses to playing in more complicated ways: to pick things up and drop them, to play with sand—piling it up and digging in it with the fingers, scooping it with the hand, digging it with a stick, sticking little sticks in it, covering things up with sand, and a marvellously numerous group of things: burrowing, digging, making little imitations of things. He soon loves to play with blocks, pieces of wood, sticks, straws, anything out of which he can construct



something. He will take delight in running, running from one thing to another, running and throwing his arms at the same time. Throwing a little later acquires interest, and to throw a ball engages his passionate interest. To cut things with scissors, or with a knife, is the basis of a whole group of activities of a play nature. Swinging in various forms, he loves to do. See-saw interests all children. The joggling board of some of our Southern States, being analogous to a large springboard, is of great interest. Swinging in swings, riding hobby horses, driving a broom, and a multitude of exercises of a similar nature are plays common to most.

This large group of plays, it will be observed in the chart, are arranged in a column growing downwards toward the left side of the page. By this it is meant to infer that these activities, these plays, having once entered into the life of the individual, remain throughout life of a greater or lesser degree of interest, and that further interests of a similar character come in. Thus, we see the boy soon learning to shoot, loving to shoot with bow and arrow, with sling, with rubber shooter, with the protean forms of toy guns, later on with real guns. We observe his growing interest in work with tools. The boy's jack-knife is one of his great sources of interest and education. Where he has opportunity, he will work with various kinds of tools, and have the greatest interest, and his play life will be of this character. He will build small pieces of machinery, build dams and little streams, make water-wheels, make these water-wheels do work. He will make small boats and sail them. He will row and swim and run and jump. Later on, he will very likely be attracted by gymnastics in some form: by Indian club swinging, by tumbling. I think that all will agree without further discussion that these represent in the main the chief play interests of the first period of childhood.

In what general way may we characterize these interests, these plays? It is evident that they are *progressive in regard to complexity of movement*. The first movements also of the baby are feeble as compared to his later movements; his later movements are feeble as compared with his movements as a little boy. Then, too, we may easily see that these movements are the fundamental ones that become reflex during later life; the earlier bodily movements of the baby certainly do. All the mechanics of running, jumping, throwing, handling tools, and the use of the body, become thoroughly reflex in later life, and this is the period in which they are becoming reflex. It is the period when the spontaneous interest of the child centers upon the acquirement of those fundamental activities which must become reflex before the mind can be free for higher achievement, but without which every-day life would be impossible.

*It is to be noted that these activities are individualistic; they are not games; the little child does not play games. Plays may be distinguished from games readily: games have definite programme and conclusion; plays include games, but games do not include all plays. It is also evident that these earliest activities are common not only to all human races, but also to the higher animals, in varying degree. Not the later development of these characteristics, but the earlier ones, are referred to, as constituting the plays of animals.*

A moment's reflection on the development of the nervous system will show that we have a most intimate relation between this psychical development and the development of the spinal cord and brain. Recent investigators tell us that during the first one, two, or three years of life, the spinal cord, together with certain lower parts of the brain, comes into its almost complete activity; that it is the period for the acquirement of all those activities that depend upon the spinal cord. These we will know are the reflex activities. They constitute activities dependent upon the "lower level," so-called, of the development of the nervous system; according to the Hughlings Jackson theory.

If we should endeavor to carry out our thought with reference to the religion of this period, it would at once be seen to consist of *the acquirement of those reflexes* that are related not only to the best life of the individual at the period, but upon *which the righteousness of later life must be built*. I refer to such matters as obedience, cleanliness, care of the body, truthfulness, and the like. The motive for the child activities in these directions may be summed up in a large way by saying that they are instinctive. All children do them to a greater or lesser extent. Whether these activities are suggested by adults, other children, or not, they represent the spontaneous dawning of child interest. The later development of this same group demands suggestion or instruction or tradition or example, but the movements themselves we may safely characterize as due to instinctive forces. Probably all persons who have accepted the biological standpoint for their thinking will agree that the best development of the later life is related to the best development of the earlier life. The best religious life of mature life can only be related to these simpler activities that are concerned with the routine acts of righteousness of daily life.

Turn now to our second group of plays: We have marked it as beginning at 7. In many individuals it begins earlier; in others, later. It must not be regarded as beginning suddenly even in the individual. It is a gradual shading off of emphasis from a group of activities whose center is exclusively one's self, to a group of activities whose center of interest is *one's self*.

*in relation to others.* This is merely a most meagre outline of the names of the generic plays of boys. The great group of tag plays—cross tag, wood tag, prisoner's base, black man, and the like—exhibits the hunting instinct. The great group of ball games, of which the most common are one old cat, rounders; the marble games; these vary in details all over the country. The whole group of track and field sports acquire interest at this period: racing in its various forms, throwing in competition, jumping and pole-vaulting in competition, etc. There are many throwing games and running games that I have not included on the chart, because of its limitations in size: throwing games, such as duck on the rock, leaping and running games, puss in the corner, blind man's buff, leap frog, mumble the peg, etc. Boys have a technical game known as "stumps," in which one boy does something which he thinks the other boys cannot do, and all the others try. There are foot-ball games played by boys. Many boys love to take care of land or animals. Hunting and fishing acquire interest, and the activities of savage warfare are carried on at present in boxing, fencing and wrestling. Predatory desires, stealing apples, watermelons, sign-boards, gates, almost anything that can be carried off are often observed, while later on, billiards and bowling, and other games of a similar character are interesting. In the main, this group of interests starts in most individuals between 7 and 12. It is a higher group of interests than those that ripen in the earlier stage; more complex intellectual activities are involved; competition is a characteristic of nearly all of these plays. More complicated muscular movements are involved, a higher degree of foresight than in the first group. Many of the movements of this group become reflex, but they are reflexes of a very high order, so high that we usually do not call them reflexes. These activities we may characterize as due to tradition, for while we find such activities among all children, they vary among the different classes far more than do the activities of the first group. The tradition of the group of boys determines the specific direction that the interest of the individual should take. A group of us English-speaking boys in Japan played not the Japanese games, but our own Anglo-Saxon games during this period. We carried our traditions with us, and they were more stable, even though there were but a few of us, than were the traditions of the Japanese boys. These boy traditions that dominate and characterize the plays through generations and centuries, often with but little modification, constitute a great racial force making toward conserving the individual in the paths of the ancestors that must be reckoned with in the same way that one reckons with heredity. Our instincts may give us impulses in

many directions, but upon these impulses must be grafted those specific habits, and in the group under consideration those specific play activities that characterize the race, for the native instinct in most cases loses its force—the habit remains.

We may further characterize this group as constituting, in a general sense, the play life of the young of all higher races; they vary in different parts of the world, but the bodily and mental qualities demanded by these sports are virtually the same in Africa and England, in China and America. The richness of these plays varies. No people have so rich a play life during this period as have the Anglo-Saxon, nor do others appear to go into this life with the intensity that we do, but these are questions of degree and not questions of kind.

These plays correspond in a general kind of a way to the life occupation of those animals whose plays are represented by the preceding group—the same skill of body, technical ability in doing difficult things, but most of all the competition, the individual combat, the hunting and fishing and war instincts that are here shown. All the tag plays appear to be development of the hunting instinct, foot-ball of the fighting instinct.

This group of plays we find in varied form over all the world. They are played by all races of people, although it appears that among the lower peoples they are not taken up by so young children as they are among those that are further advanced.

If we were to expand the thought for this period in regard to the religious life for boys, we should see that it consists largely of the higher development of the individuality, the development of ethics and morality, regard for the rights of others. It is the justice and legal period. The games of this period differ very much between girls and boys, a differentiation that is far more marked than it is in the earlier group. We should here again call attention to the higher being best and most natural when built on, and a natural continuation of the lower. However, we must not spend more time upon these early divisions, for they are merely incidental from our present standpoint.

Coming now to our third major division, we find still more highly organized plays and games. These begin approximately at 12. As I have remarked before, they may begin earlier, or may be postponed; in some individuals they doubtless never begin. Attention is called to the characteristics of this group of games: baseball, basket ball, foot-ball, cricket, hockey, are the chief games of the Anglo-Saxon young man. The plays of the period are usually done in gangs or groups, which show the aggregating capacity of the Saxon. Boys have their pals, and predatory activities are usually carried on in co-ordinated, homogeneous groups that maintain their personnel often for

years. It is peculiarly the time for hero worship, and for its characterization by the plays of the period. All of these games and plays show this instinct for co-operation. The games all demand that the individual shall subordinate himself to the group. *Team work is the key-note of this group*, as individual excellence was of the preceding. I do not mean by this that boys always do team work, for they do not; I do mean that that is the ideal that these games represent, without which it is impossible to secure superiority. Little boys will play foot-ball and baseball, and thus appear to violate the orderly development that otherwise obtains. Those who are familiar with the plays of such children, however, must have noticed the fact that team work is comparatively rare; foot-ball and baseball, as played by little boys, is a game of individual excellence, each player doing as well as he possibly can, but not sacrificing himself for the sake of the team in which he is playing. These plays demand a higher degree of mental and moral qualities than do the preceding. The captain of a team must exercise qualities of a high order, analogous to those exercised by a successful chief. We note, then, two major elements—co-ordination and self-sacrifice.

These plays represent the characteristic occupations of those whose play was represented by the preceding group. Savages who have reached the stage of co-operation under a chief, of fighting in organized groups, are doing that which the Anglo-Saxon boy commences to do soon after he is 12. These group activities involve not merely the subordination of self, and the elevation of the group, but the pursuit of a distant end, by means of definite steps, usually indirect, having a more or less definite programme; involve obedience to a leader, even when he is evidently mistaken; involve self-control, loyalty to the group as a whole, and in varying degrees, the despising of pain and of individual discomfort. These qualities appear to me to be a great pulse of beginning altruism, of self-sacrifice, of that capacity upon which Christianity is based.

I do not wish in any way to press the thought, for it proves almost too much; still, we cannot avoid it. These group games are played by Anglo-Saxon children, but by none others. The highest development of the play life of the Chinese, Japanese and Hindoos, give us but one suggestion of games involving qualities such as these. Polo comes to us from India, but as an Indian game, it is not national, being only played by a few, and till developed by the British, does not appear to have had the elements of team work that now appear.

Lacrosse is a North American Indian game. It demands co-operation, but cannot rank with the other games in its demand for self-sacrifice. The arrangement of the players, each man

having his special opponent in a special part of the field, makes it a game of individual excellence more even than a team game. Co-operation is demanded, but not at the sacrifice of self.

Is it not an extraordinary fact that among such highly civilized peoples, more civilized certainly than we are, as the German, French, Italians and Spaniards, we find no such national allegiance to group games among the boys as we find in England and America? I say more civilized, I do not say better civilized. There have been many attempts to introduce into Germany and France different forms of these group plays, but almost without success. The highest form that sport takes have the characteristics of our second group of plays, as shown possibly by the duelling of the German student. These people have capacity for organization, and for the exhibition of the qualities mentioned, but the instincts that lead in these directions do not seem to ripen during early adolescence, so far as we may judge by their plays and games. This appears to be a later acquirement. We find organization and love of the group in the German student societies, but no great plays involving self-sacrifice. In respect, then, to these higher qualities of co-operation and group activity, we place the Anglo-Saxon first among the peoples of the world. The traditions involving this group of plays are more complex than those of the preceding. Instinct appears to be less sufficient and tradition more important. It needs but a word to call attention to the vast difference in the plays of boys and girls for these same years.

It is impossible, without too great digression, to discuss the great dance plays with their wonderful range of mimetic and dramatic activities in their relation to this subject. They demand co-operation, but not self-sacrifice.

Of much interest in this connection are recent investigations in regard to brain anatomy and physiology. Hughlings Jackson, already quoted, speaks of the spinal cord and of the lower part of the brain as the "lower level" of the nervous system. It is the reflex level. The second level of development is the "sensori-motor" brain, and comprises about one-third of the cortex. The chief years for the development of this second level are during what I have characterized as the middle period in my chart—the years from 7 to 12. All the finer motor and sensory development find their chief growth during these years. The "upper level," so-called by this theory, has to do apparently more with the inhibiting and co-ordinating capacity of the brain. Recent investigation by Flechsig, and other observers, have shown that the period commencing with about 12 corresponds in the development of the brain to the particular



growth of so-called tangential fibres, connecting the different parts of the cortex. These tangential fibres are exceedingly fine, occur in three main layers, and are related prominently to those parts of the brain that are neither sensory nor motor. They are association fibres. Flechsig now goes on into the realm of what is not yet demonstrated, and maintains that these areas of the brain are for association purposes, and hence he characterizes them as "association areas." He maintains that the development of these tangential fibres is related directly to the development and utilization of these association areas. And further, that all the higher capacity in the individual in higher directions is related to this associational area development. This certainly fits in with observed facts that independent reason has its chief pulse of growing life, beginning with approximately the same year—12—as do these tangential fibres. The relation of this theory to the subject under discussion, is merely to show that in the recent neurological investigations, the trend is wholly in the direction of such a development, from the simple to the complex, as we have spoken of, and also that the period beginning at 12 is marked by a special development that differs in marked respects from those of the preceding groups.

What is the highest development of these instincts that show themselves in the group activities referred to? We are all aware of the fact that when these group activities become allied with wickedness, we have the most perilous forces of modern civilization at work. We have the gang of the city. The importance of the social traditions of the group in which the boy finds himself are not easily over-estimated. The most careful studies of crime on the one hand, and conversion on the other, unite to show that this period in life is the most decisive one. If the life is to be righteous, or if it is to be wicked, it is usually settled during this period.

The religious life must not be regarded as out of relation to the spontaneous life and development of the individual. The early reflexes form the basis of later acquisitions of a righteous character, and it is certainly open to doubt whether the later righteousness can be full and effective except when built upon this basis of reflex. The daily habits of righteousness, courtesy, honesty, obedience, etc., are referred to. Just so these later instincts for co-operation, even where it involves self-sacrifice seem to form the natural basis upon which the life of service to others is most naturally built. And further, it is believed that this life for others is rendered far more probable, natural and tangible, when it comes as the gradual unfolding or development of that instinct that has its first great pulse of growth in the games of adolescence. It is not that these games

in themselves produce the desire or capacity for self-sacrifice. They show the capacity and indicate one method for the development of this capacity.

The first thing that naturally strikes one about these activities is that they are tremendous; they involve every bit of energy that the individual can put forth; they are heroic; they are savage. These qualities we may sum up as a whole by the word katabolic; they are masculine, and the male is, on the whole, predominantly katabolic or energy-expending, whereas the female is anabolic predominantly, energy-conserving. The plays of young men and young women show this differentiation. In the most careful study of sex that has yet been made—*The Evolution of Sex*, Geddes and Thomson—this has been shown to be the fundamental element that distinguishes the sexes from each other. It is a difference that is at the basis of sex differentiation, both psychical and physical. It is not meant that men are katabolic while women are anabolic, but that the predominant characteristics of the male are katabolic, while the predominant characteristics of the female are anabolic. It is true that the male conserves and the female expends, but these are not their predominant characteristics.

If, then, the religious life of Anglo-Saxon boys is to include the highest development of his best self, it must be fundamentally katabolic; his religious life must demand these same qualities that we have seen to be demanded by the plays of the period. The religious life must be energetic and enthusiastic, and executive; he must do things, he must do hard things, he must do heroic things.

The second characteristic of this group of activities is their objectivity. These plays all have some definite end, and some immediate programme, but they are all tremendously objective. They may involve subjective activity, and they do, but the subjective activity is never an end; it is a means. The boy must control his temper, but for the sake of winning the game. I do not think that it can be shown that any of the chief spontaneous interests of Anglo-Saxon boys center in subjective activities. The boy loves to master things, to master the world about him. His reason is commencing to be active, and in the use of his reason applied in various directions, he is deeply interested. Boys will work hard and for years, to gain power in different directions, mentally and physically, but those activities that call for the highest things in the boy-life, that arouse the most passionate enthusiasm, are those that involve this group activity, loyalty to college or to country, some objective end rather than a subjective one.

➤The third characteristic of these plays is their exhibition of the gang instinct, the instinct of the boy for co-operation, for

obedience to a leader, for the subordination of self to the programme for the whole, and as a whole, for those co-operative industries that are the basis of modern life. They exhibit loyalty to one's fellows, standing by one's comrades; boys in gangs are often loyal to each other, even where such loyalty costs dear.

Fourth, I would suggest that these activities bear a definite relation to hero-worship. This is perhaps the subjective characteristic of the period. This cannot easily be proven, except to those whose memories serve them well enough to enable them to reproduce their own state of mind during these years. The boy whose life cannot be dominated by some hero, real or false, of a vigorous kind, seems to be the exception. The supremacy of the athletic hero has long been recognized as great among boys and among savages.

A part, then, of the problem of the religious life of Anglo-Saxon boys is to find that which shall be predominantly katabolic, objective, organized, and which will involve this principle of hero-worship. It is not claimed that these points are all-inclusive, for they are not. They are merely the dominant characteristics of Anglo-Saxon boys, as shown by their instinctive and traditional plays.

The most that can be done in a paper like this is to suggest the gross outlines of our topic. I do not attempt to suggest the mode by which the religious life may be made to take on the characteristics that we have discussed. That is a separate subject, and can be well discussed only upon an agreement as to the ground already gone over. It will take years, and perhaps generations, before a complete solution to the problem can be given. Nothing short of successful application for a long time, and on a large scale, would demonstrate fully the truth of any theory.

In closing, let us note briefly the extent to which the religious thought and life of the last 25 years gives emphasis to these qualities of Anglo-Saxon young men.

(1) The religious life has not been regarded as a progression so much as it has a state. The religious life has not been differentiated between childhood and adult life, adult life and old age, manhood and womanhood. We have demanded of childhood the thought and religious expression of adult life. We have expected young men to have the same religious life as old women.

Individuals have instinctively recognized growth in these matters, and wise parents and pastors have carried out notions that were not formulated, but the theological formulation of religious truth has made no place for religious epochs and

growth of the kind under discussion, with the exception of conversion.

(2 and 3) The religious thought and life has not been predominantly either katabolic or objective. I do not say that these elements have not been present; they have, but have not been predominant. Nor do I wish to give the impression that the religious life of young men must be exclusively katabolic and objective. We should lose fundamental elements were this true. But dominant characteristics must be katabolic and objective.

What have been the special virtues and thoughts of the last 25 years of religious history?

In our prayer-meetings, churches and religious writings, we hear chiefly of rest, joy, peace, temptations, prayer, trials, resignation, trust, sense of sin, atonement, love to God, hope of heaven, desire for fortitude to bear up under the trials of life—all involving first introspection and analysis of feelings.

This list is not intended to be complete nor particularly modern; it aims at the characterization of the period. As a result, the church and Christians have not stood, and the church does not stand to-day for objective righteousness. As an organization, it is not the power in the community that can be relied on to carry on all good enterprises, although individual members may and do. The Christian life has not been commonly regarded as involving loyalty to one's city—her streets, her poor, her politics, her sick. Yet we may come to put these things first as characteristic of the religious life of men.

We often hear that but 7 per cent. of young men are in the churches. I do not know that this is true, but there is no questioning the fact that the bulk of the pride and flower of America's young men stand outside of and not inside of the church, while the great bulk of our church members and Christian workers are women. Do we need to go far to seek the reason for this situation? The church has not put emphasis upon those qualities that represent the best and noblest side of young men. The qualities demanded by her are chiefly anabolic and subjective. These are feminine, not masculine characteristics. So our churches are feminine, not masculine in composition.

Till religion can include all that is highest and noblest in young men, till it is heroic, katabolic, objective, we need not expect our young men to be religious.

It would be food for the pessimist were but 7 per cent. of our young men allied with that which made toward high manhood; but we are not pessimists.

The instant response that young men give to occasions of objective need is superb. To rescue life, to save a sister's

honor, to right wrong, calls for and secures enthusiastic devotion from real men.

(4) The religious life and thought of the last 25 years has not, save in a single direction, laid emphasis upon the capacity for that heroic subordination of self to the group that we have seen to be one of the chief characteristics of the Anglo-Saxon young man.

Missionary ideals have appealed to high manhood. The magnificent response among our colleges to the recent appeal for men and women to consecrate themselves to missionary lives has been one of the wonderful things of the age; as many have volunteered as there are students at Harvard, Amherst, Brown, Dartmouth and Williams combined. We have no finer stock in the country than this group of college men and women. Their proposition to "evangelize the world in this generation" is vast enough, objective enough, heroic enough, katabolic enough, self-subordinating enough, to call for the best and noblest, and it has done so. Between one and two thousand have already gone on this world errand.

We appeal to the organizing sense of young men to some extent in our young men's religious organizations, but the real direction is but rarely in the hands of young men even when it is nominally so. The young men know this, and the appeal to their organizing instincts have comparatively little fruit. Then, too, the object of the organizing that we lay out for them does not correspond to their highest natures. We appeal to selfish interest. We make these institutions self-improvement clubs in various lines—physical, mental or spiritual. Such objects are worthy, but are not the most worthy. They are not larger than self. They do not call for this subordination that we have emphasized, nor for heroism. Not that men will do things for the sake of being heroic and subordinated: this violates their inmost instincts; but they will respond to high objective ends that are worthy of their lives, with their lives.

No real man will sacrifice for his own victory, nor feel so elated and proud when successful, as he will for his college. The best is not self, but group. The highest activities for the self are lower than those for the group. Group loyalty is the basis, the first dawn, of love to city, country, humanity, and may I say of God also?

We must appeal for high activities if we want high qualities. Capacity for devotion, heroism, self-sacrifice, nobility, is not dead. It needs the adequate objective demand.

Fifth, and last: the religious leaders who have been presented for the hero-worshipping instinct of the Saxon boy have been inferior, on the whole, in masculine respects to those presented to those who were not religious leaders.

The kind of lives that appeal to young men have been found, for the reasons already given, among those whom we do not usually class as leaders in the church or in religion. George Washington, Abraham Lincoln, and a multitude of others, real heroes, leaders in upbuilding the Kingdom of God, have not been leaders in the Christian church. The movements that led to religious liberty, the divorce between church and state, the abolition of slavery, were not chiefly led by the church or its leaders.

Splendid names come to mind, such as David Livingstone, who fulfilled all the demands of a hero-loving boyhood, but the godly men of the community and of history have not, on the whole, been such as to appeal to our hero-worshipper. They did not exhibit his own virtues in high light. They were not predominantly objective and katabolic.

I should not present these facts, nor make this analysis, did I not feel sure that the difficulty can be met; religion can and must take a masculine, katabolic aspect for its young men. The religious world needs young men. There is enormous demand for these adolescent characteristics within the church. There is equal need for true religion in the lives of young men. The church, with the loyal service of her young men, can be an objective force for righteousness in our cities that shall make them the chief source of power to save our country from the perils of wealth, the perils of corrupt politics, the perils of a powerful unsatisfied proletariat. And this service, on the other hand, will call out those nobler elements that alone make life worth living, and a victory rather than a steady defeat in real things.

In the statement of this subject, it is scarcely possible that misunderstanding shall be entirely avoided. It may help, however, if the following point is kept in mind.

I have attempted to make a clear and brief statement from a single view point, but have not endeavored to make any complete statement of the religious life as a whole. Were such a statement attempted, I should attempt to show that the present religious endeavors are founded on deep facts in the psychical life; that the subjective religious life is fundamental; that all objective endeavor that does not spring from what is within is but extrinsic and superficial; that it is fairly characterized by the phrase "deadly doing" that some one has applied to it.

We should be among the first to defend the internal religious life, but the point I am trying to make is that this life is most real when it is most unconscious, and when we can judge of it by its objective results.

We must consider the motor end of the religious life in any

complete scheme. It is this end that we are trying to present. We judge of the power of motive by its effects upon the life, but we do not thereby confound the effect with the motive.

In discussing this subject with different persons the following points have been suggested: An investigation ought to be made in regard to the character of men who attend Bible classes. This would be a somewhat difficult matter to do in any statistical way. I have had conversation with the leaders of eighteen Bible classes, and the general testimony is that with numerous exceptions the group as a whole is not aggressive and energetic. It does not represent the best element, the most aggressive element, among young men.

During the last few years, no single subject has been more studied and preached upon than various phases of problems raised by sociology, and these problems have been of definite interest to men. So that in addition to the topics spoken of a few pages back, one must add numerous sociological topics if it is to fairly characterize the last ten, or more particularly, the last five years. This preaching does seem to attract young men.

The character of Christ, and the nature of His work, in view of these facts, must be discussed. We constantly think of Christ as the embodiment of meekness, of non-resistance, and all the passive virtues. This is true, but I think we have wholly misrepresented Him if we fail to bring into equal prominence His life of active, objective righteousness; His tremendous denunciation of hypocrisy and wickedness; His constant doing good to others; the fact that in all His teaching, doing good and the service of others was made predominant rather than talking about it. His life represents objective righteousness as perfectly as it does subjective righteousness.

Movements of the church that involve the expenditure of great energy and doing things immediately attract men. We are drawn at once by the present-day movement of the Episcopal Church in New York city, which attracts men as workers. Let the church undertake any particular campaign of an objective kind, let it stand for some definite thing to be done in the community, and if that thing is of a character that is at all related to manhood, it will command the services of men. This is merely the dictum of experience.

I believe that the general feeling of more or less ill-disguised contempt with which active, energetic young men regard the Young Men's Christian Association, and other religious endeavors, is not because they stand for righteousness, but because they stand fundamentally for subjective things. Theirs is an instinctive and natural feeling.

We are seeing apparently the passing of the revival methods

as they have been known since the revival of 1857. Moody, as the best type, is changing the character of his work, according to his own statements. The times have changed. Appeals to the same subject in the same way that wrought wonderful results half a generation ago, do not appear to be effective today. Sayford, the college evangelist, says that it takes ten times the effort to secure results that it did among the college men ten years ago.



## THE MONEY SENSE OF CHILDREN.

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The money sense of the young child, as of primitive man, is feeble and nascent. Springing into life in savagery, notes Morgan,<sup>1</sup> it required the subsequent period of barbarism to develop the germ and prepare the human brain for the acceptance of its controlling influence. With a view to ascertaining children's ideas and feelings toward money, as well as the strength of the money sense in early childhood, the following question was asked of 2,012 Massachusetts school children: "If you had a regular allowance of fifty cents a month to spend as you liked what would you do with it?"

Answers were received from 922 boys and 1,090 girls, ranging in age from 7 to 16 years. The following numbers indicate the percentage of children who would save it:

AGE.	BOYS.	GIRLS.
7 years	43%	36%
8 years	45%	34%
9 years	48%	35%
10 years	58%	50%
11 years	71%	58%
12 years	82%	64%
13 years	88%	78%
14 years	85%	80%
15 years	83%	78%
16 years	85%	82%

✓ The figures show uniform growth in thrift tendencies with increase in years. To some extent this represents influences due to training, although not entirely, since the allowance was a purely imaginary affair—a fact which offsets to some extent the training. The tendency to save is at all times stronger with the boys than with the girls, although the differences are less with the older children than with the younger. Miss Anna Köhler,<sup>2</sup> who made a somewhat similar study in California, finds that fifty-seven per cent. of the boys and fifty-

<sup>1</sup> Ancient Society. By Lewis H. Morgan, London, 1877.

<sup>2</sup> Children's Sense of Money. By Anna Köhler. Barnes's Studies in Education, Stanford University, 1896-'97.

four per cent. of the girls would save the money, thus agreeing with my own study, that children's saving propensities exceed their desires to spend, and that this propensity for saving money is the stronger on the male side of the house. Perhaps this should not be unexpected when one recalls, as Ribot<sup>1</sup> has pointed out, that the feeling of property is derived from a natural condition of existence, namely, nutrition. "It is first manifested," he says, "in the form of a provision in some animals who store up a reserve of food for the future. In primitive man this instinct extends to clothes, weapons, the cave or hut which he inhabits; later on, with the nomadic life, to herds and flocks, then to agricultural products, gold, silver, paper money; finally to that impalpable thing called credit."

The reasons given by the children for saving the money, suggest some rather interesting tendencies. Nine per cent. of the boys and eleven per cent. of the girls would save for dress—to buy dresses, suits, hats, shoes, etc. This tendency to save for dress increases with advance in years, being weakest at 7 and strongest at 16 years, the girls generally leading. A second group—about four per cent. of each sex—would save the money to buy some other useful things, such as wood, coal, food and furniture. If this group represents the ultra-utility sentiment of American children, foreign critics are far from the truth in their estimates of us. A third group of these embryonic economists would save the money in order to secure at some later date some form of personal pleasure,—toys, candies, rides, etc. This class is represented by fourteen per cent. of the boys and nine per cent. of the girls. It is highest from the tenth to the fourteenth years inclusive. A fourth group would save the money in order that they might give pleasure to others by giving birthday or Christmas presents, including four per cent. of the boys and seven per cent. of the girls. In this, as in other studies which I have made on the social consciousness of school children, the girls always out-number the boys in the profession of altruistic sentiments. The same fact is apparent in the fifth group which includes those who would save the money to buy books and pictures. It is represented by but three per cent. of the boys and by seven per cent. of the girls. One must look to this group, too, for the expressed intellectual and æsthetic interests of the more than two thousand school children included in the study. The philanthropists are represented in the sixth group by two per cent. of the boys and three and one-half per cent. of the girls. They say that they would save the money for the poor, the church or missionaries.

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<sup>1</sup> Psychology of the Emotions. By Th. Ribot, London, 1897.

Miss Köhler also found the girls more interested in saving for dress than the boys. She notes: "Saving for dress to the boys means, shoes, hats, or a suit, no mention being made of gloves, neckties or handkerchiefs. The impression given by the papers is that the boys would save to buy what is necessary, and that the girls indulge in accessories, like gloves, handkerchiefs, belts, ribbons, etc." She also found that the girls were more willing to spend for others than the boys, and concludes that this difference may be due to the training given each from their earliest years. "The daily life of girls," she says, "spent mostly in the home circle, tends to make thought for others habitual, while boys, allowed freedom both in play and work, naturally develop the egoistic side of their natures."

Fifty cents is such a small sum, to the older children at least, that it seemed desirable to ascertain the mental effect of a larger sum of money. The following question was accordingly asked of one hundred boys and one hundred girls at the age of eleven years: "If you had one thousand dollars to spend as you liked, what would you do with it?" Some striking contrasts were obtained. Ninety-eight per cent. of the boys and seventy-two per cent. of the girls say that they would save it. In the allowance test of fifty cents a month, but seventy-one per cent. of the boys at eleven years and but fifty-eight per cent. of the girls said that they would save the money.

Some of the miscellaneous ways of spending may be indicated by the following quotations from the children's papers: Girl 9 years—"Buy some pumpkins." Boy 8 years—"Buy a bed lounge." Boy 7 years—"Buy a cow." Girl 7 years—"Buy a organ." Girl 13 years—"Buy plant slips." Boy 13 years—"Spend half for tobacco and the rest for fun." Boy 14 years—"Help congress stop liquor selling and drunkenness." Smart boy 12 years—"Treat my best girl and myself."

A strong moralizing tendency was apparent from the age of thirteen years on. The following from a boy of sixteen will serve as an example: "If I were allowed fifty cents a month I would save it; that is, use only that which would be absolutely necessary. There are many dangers in having plenty of this world's goods; a great deal depends on the person's character of course, as some people would be tempted or led when another would not be. There are two vital temptations it seems to me; one, which is probably the most common, is that the person who has plenty of money will spend it freely, and often more freely than he ought, and perhaps get into debt. If a boy has plenty of money he will lay the foundations of a spendthrift's life. The other temptation is to hoard it; to become a miser, to let the gold possess the man instead of the

reverse. Gold is all right in its place; the *love* for gold is the root of all evil, but the good or evil lies in our own hearts, in our method of using or abusing it. If I had an allowance of fifty cents a month I should save what I could for future use, using only that which can be invested economically. If we could realize how much the five cents here, and the ten cents there, would sum up at the end of a year, we would be more careful and thoughtful of our use of money. We are all dependent on each other; this can be done by making the money we have in hand go as far as possible." This rather extended essay is introduced here to show a tendency on the part of young people to moralize—a tendency that is especially strong at the dawn of adolescence.

I also secured from 102 adults—students of psychology in the State normal schools at Westfield, Mass., and California, Penn'a,—reminiscent papers giving earliest recollections of money. The reminiscent data I have collated under the following headings: (1) Earliest desires for money; (2) how money was obtained in early childhood; (3) where the money was kept; (4) saving tendencies; (5) how money was spent; (6) childish superstitions about money; (7) financial ambitions; (8) collections of coins.

(1) Earliest ideas about and desires for money. Forty-five per cent. say that as children they had strong desires for money, and fifteen per cent. say that they cared little or nothing about money. One says: "I thought twenty-five cents a great fortune." Another: "I considered one hundred dollars the sum necessary to be very rich." Play-money is mentioned by seventy-eight per cent.,—paper with lead pencil impressions of coins coming first, and buttons and pins next in frequency. One writes: "I used paper pulp, by pressing and drying, to represent silver; for gold, I gilded the paper money."

(2) How money was obtained in childhood. Fifty-nine per cent. say that as children they earned money by running errands, selling papers, empty bottles, rags, etc. Thirty-five per cent. say that they were largely dependent upon the gifts of parents, relatives and friends, and twelve per cent. received a regular and definite allowance. One student notes that she always had an uncomfortable feeling if she had an odd number of cents, and that she was not content until she could get another cent to make the number even. Miss Köhler in her study asked the children if they had ever earned any money; and if so, how? Seventy-four per cent. of the boys and sixty-nine per cent. of the girls say that they are in the habit of earning money. In California where fruits are so abundant and fruit picking is so common, this form of occupation as a means of earning money came first. One young miss had the conception of

labor so often credited to American children, as is indicated in her reply: "My father is not so poor that I have to earn money."

(3) Where the money was kept. Fifty-seven per cent. say that they had toy-banks in which they kept their money; twenty per cent. say that their money was deposited in savings banks or other real banks, and twenty per cent. mention other places where they were accustomed to keep their money—in the bureau corner, in an old stocking, in a discarded sugar bowl, etc. One student writes: "Although there were numerous toy-banks in the house, I preferred to store it in secret places, where often I could not find it myself." Says another; "I used to place my money in an old-fashioned clock that stood in the kitchen." Another: "I always kept my money under the carpet in the room where I slept."

(4) Tendencies to save money. Twenty-two per cent. say that they were offered special inducements for saving, as, if they would save up fifty cents they would be given an equal sum by parents or friends. Thirteen per cent. say that they saved for some special purpose, and most of the others say that they did not save money at all.

(5) How money was spent. Thirty-two per cent. say that they spent their money for personal pleasures and luxuries. Ten per cent. say that they bought presents for parents or friends. One woman mentions the numerous presents which she made to her doll. She says: "I loved my doll next to myself, and bought her many presents." Thirteen per cent. say that they spent their money for useful things, and seventeen per cent. for philanthropic purposes. When one compares the willingness of the school children, in both my own study and that made by Miss Köhler, to give money for philanthropic purposes with the greater willingness for such giving in the reminiscent papers, one is convinced of the obscuring influences of the later life and larger experience. But a number of the adults relate that such giving was not infrequently under protest. Writes one: "Stories of missionaries always melted me, and under the impulse of the moment I would give all I had to the missions. But soon there would be a revulsion, and I did not care whether the heathen were converted or not." Another writes: "I often gave pennies to the Sunday School, but I always inclined to the belief that they were thrown away, and I escaped contributing whenever possible."

(6) Superstitions about money. Fifty-five per cent. of the adults mention money superstitions to which they held with more or less tenacity in their childhood. Here are a few of those oftenest mentioned: "A long arm the sign of riches." "Find a cent on your birthday and you will find money all the

year." "If the palm of your left hand itches you are certain to receive money." "Long hairs on the wrists indicate wealth." "Stepping on a cigar-stump and saying '1, 2, 3, good luck for me' will bring you money." "Have a person bow to you 100 times; put as many crosses on a bit of paper; bury the paper in the ground, and three days later you will find some money on the spot where you buried the paper." The two money superstitions most often mentioned were the finding of a pin and picking it up, and the finding of a horse-shoe and placing it over the door.

(7) Financial dreams. Most children, it would seem from these returns, have youthful dreams of becoming rich. Eighty-two per cent. of the reminiscent papers mention such financial dreams. Twenty-two per cent. thought that they would become rich by inheriting from relatives. Thirteen per cent. by making some useful invention or by writing a celebrated book; and five per cent. by marrying riches.

(8) Collections of coins. The fact that this question was not directly asked, may account for the small number—but four per cent.—who mention such collections. I am now making a direct study of children's collections in which the influence played by coins promises to be more pronounced.

For twenty years or more the schools in many sections of the United States have attempted to influence conduct, in regard to economic affairs, by training children to better understand money values; by providing opportunities calculated to call forth and stimulate the disposition to save money; by endeavoring to give the children a sense of the economical value of their clothes, their books, and their playthings; and, more particularly, by adjusting the school work in arithmetic to the sense of money values in the minds of young and growing children. The most active agency in the inculcation of economic instruction in the elementary schools of America has undoubtedly been the School Savings Bank. While originally a benevolent institution for the safe-keeping of the small earnings of the poor, it has so enlarged its scope as to include the children of all classes of society; and it has become, in consequence, an important educational agency in the inculcation of habits of thrift and self help. Dr. William T. Harris says in this connection: "If every child can be trained to save, and as well given the knowledge which assures his earning, much will be done toward protecting the very poor from the temptations and sufferings of poverty. The School Savings Banks have already yielded excellent results in this direction. The system tends to prevent pauperism, crime, prodigality, and various vices, and to make children thrifty, orderly, economical and discriminating in the use of money. It has its influence upon all phases of economy."

In his renowned pedagogical classic, *Leonard and Gertrude*, Pestalozzi regenerates the improvident inhabitants of Bonnal by developing the economic sense of the Swiss peasantry. His teaching is a recognition of the important educational principle that thrift is a virtue which cannot be commanded at pleasure, but must be cultivated during the growing and formative period of childhood. Saving clearly involves the exercise of two recognized psychological powers. (1) Imagination to forces advantages which will accrue from possessing and (2) strength of will sufficient to enable the individual to pursue a distant object steadily for a long period of time. It is in the latter that children usually fail. The schools and the teachers, as agents in the business of training boys and girls, should give instruction such as will enable children to relate themselves to the world in which they live through seeing the value of things in terms of money.

## BIBLIOGRAPHY.

- ANFOSSO, LUIGI. Das Ehrbarkeitsgefühl bei Kinder. *Die Kinderfehler*, Vol. I, No. 5, 1896, pp. 139-146.
- CADET, ERNEST. Les caisses des écoles. *Recueil des Monographies Pédagogiques*. Paris, 1889. Vol. V, pp. 1-31.
- KING, D. B. Postal Savings Banks. *Popular Science Monthly*, December, 1885. Vol. XXVIII, pp. 160-169.
- KÖHLER, ANNA. Children's Sense of Money. *Barnes's Studies in Education*. Stanford University, 1896-97. pp. 323-331.
- KÖLLE, F. Gutachten über eine Gelddiebstahls angeklagte 14 Jahre alte Schülerin. *Die Kinderfehler*, Sept., 1898. Vol. III, pp. 150-153.
- LAMBERT, AGNES. Thrift Among the Children. *Nineteenth Century*, April, 1886. Vol. XIX, pp. 539-560.
- LAURENT, FRANÇOIS. Thrift in Schools. *International Congress on Education*. London, 1884. Vol. II, pp. 603-623.
- DE LAVELLYE, EMILE. *Luxury*. London, 1891.
- MACE, MRS. Thrift and Social Intercourse. *Universities and the Social Problem*. London, 1895. pp. 185-196.
- DE MALARCE, A. *Die Schul-Sparkassen*. Berlin, 1879. pp. 31.
- MONROE, WILL S. *Entwicklung der sozialen Vorstellungen des Kindes. Sammlung von Abhandlungen aus dem Gebiete der pädagogischen Psychologie und Physiologie*. Berlin, 1899.
- OBERHOLTZER, SARAH L. School Savings Banks. *American Academy of Political and Social Science*. Philadelphia, 1892-93. Vol. III, pp. 14-29 and Vol. IV, pp. 972-974.
- OULTON, W. School Savings Banks. *International Congress on Education*. London, 1884. Vol. II, pp. 623-638.
- RUSKIN, JOHN. *Unto This Last*. London, 1862.
- SMILES, SAMUEL. *Thrift*. New York, 1875. pp. 404.
- THIRY, J. H. *School savings banks in the United States*. New York, 1890.
- WALTERS, JOHN T. *Thrift lessons*. London, 1881. pp. 240.
- WILLARD, HATTIE MASON. Children's Ambitions. *Barnes's studies in Education*. Stanford University, 1896-97. pp. 243-253.

## HOME AND SCHOOL PUNISHMENTS.

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Opinions vary respecting the expediency and rightfulness of punishment. How children should be chastised is a mooted question. Some believe in moral suasion, some would employ the milder forms of punishment only, while others think that the harsher forms are sometimes necessary, and do not hesitate to assert that corporal punishment has its place. These opinions are often held with a tenaciousness that approaches obstinacy. Their sensational coloring is frequently deeper than the reflective. One teacher remarks, "When I punish a child I never know whether it does the child any good or not. I do know that I feel better." Often the child does wrong, the parent is provoked, and seeks, in the punishment of his child, little else than to satisfy his own displeasure. Again, a child does wrong; for the good of the child the parent inflicts punishment, and here it ends. There is no thought of bringing remedial means to bear upon the youthful offender. Recently in a police court in Evansville, Ind., five young boys were convicted of stealing. The judge gave as sentence the choice between a public whipping and the reform school. The parents of the boys chose to have their sons whipped. Accordingly the turnkey carried out the sentence of the court faithfully, administering to each boy twenty-five lashes. This suggests the barbarism of past ages; nevertheless it is quite possible that a good flogging is often better for young culprits than are the contaminating influences of a reformatory institution.

The punishment of children, in school and out, presents an important field for reflection. Professor Earl Barnes and also Will S. Monroe have done some interesting and valuable work in determining the attitude of children in regard to the justice of punishment, and in finding out their standpoint and their grounds for believing in the right or wrong of an act of conduct. Professor Barnes in his studies with children has found that they almost universally look upon punishment for misdemeanors as just. He expresses himself with considerable force to the effect that if discipline is to lead to self-control it must be in agreement with the child's sense of justice. He believes that in a case of wrong doing the child's standpoint is



to be regarded. That the question is—how does the child feel in the case, not how ought he to feel? How will the remedy affect the patient? He asserts that if the punishment leaves the child ill-natured or cowardly it has not been remedial in character, and consequently is bad punishment.

The writer is impressed that the subject of home and school punishments is largely a study of the individual. Whether or not the act should be punished, what should be the nature of the penalty employed, and with what degree of severity it should be administered, all depends upon the attitude and upon the physical and mental constitution of the particular child in question.

Jeremy Bentham, in a work published in 1843, from the standpoint of jurisprudence defines punishment as "an evil resulting to an individual from the direct intention of another, on account of some act that appears to have been done or omitted." The term punishment has a twofold signification. It is used to denote—1, the act which produces the evil, and 2, the result of the act or the evil itself. This evil is the pain or loss of pleasure which one suffers because of some evil action. The objects of punishment are two—an immediate and an ultimate object. To inflict pain is the immediate object; to turn aside an evil greater than itself is the ultimate object. Hence in placing punishment upon an offender one should consider what is the character of the pain or loss that the wrong doer must sustain in order to restrain him from again committing the offense. In speaking of the object of punishment Horace Mann uses the following words: "We inflict punishment that we may ward off a greater evil by a less one,—a permanent evil by a temporary one. We administer it, only as a physician sometimes administers poison to a sick man,—not because poison is congenial to the healthy system, nor, indeed, because poison is congenial to the diseased system; but because it promises to arrest a fatal malady until appropriate remedial measures can be taken. . . . Punishment, then, taken by itself, is always to be considered as an evil. The practical deduction from this principle is, that the evil of punishment should always be compared with the evil proposed to be removed by it; and, in those cases only where the evil removed preponderates over the evil caused, is punishment to be tolerated. The opposite course would purchase exemption from a less evil by voluntarily incurring a greater one."

Not every wrong action of the child should be considered worthy of punishment. There is a distinction between naughtiness and wickedness. Wrong doing in children is not necessarily evil. It may serve simply as a means of getting rid of energy that must be expended. In dealing with children there are three

classes of wrong doing to be distinguished: (1) Those wrong doings which come from want of knowledge; (2) those which are the result of careless neglect; and (3) those which arise because of willful disobedience.

Our first wrong doings, and by far the larger part of those of early life, belong to the first class. Activity is the prominent characteristic of childhood. It is essential to development. Often the child does wrong because he must do something. Nature has given him a mental constitution that compels him to respond to external occasions, right or wrong, as they present themselves. All mental activity is conditioned by the organization and development of the nervous system. The sensory side of the nervous system is constantly receiving from the outer world sense impressions, and the motor side is constantly transforming these impressions into stimuli to action. Thus there is ever on the part of the child a lively reaction to his impressions. He is restless, unceasingly active, doing all sorts of things. He responds to external occasions, right or wrong, as they present themselves. Left to himself he cannot be expected to act otherwise. The nervous system develops slowly, consequently the child gains self-control gradually. At the age of seven or eight years the child does little serious thinking. It is the testimony of cerebral physiologists that the association processes between the different sense areas do not develop sufficiently to permit to any very great extent the inhibition or control of one impulse by another until about the time and during the period of adolescence. During this time numerous and varied connections are set up between the different sense areas and the child's power to reflect and compare impulses, and motives becomes augmented. Thus it is that the child's early actions being determined by the peculiar tendencies of his nervous system are mostly of the impulsive and instinctive types. His wrong doings are not dominated by forethought. There is in them little intention to do mischief or to break law. Are they worthy of punishment?

It goes without saying that the activities of childhood are to be directed. When a child goes wrong his environment is bad and needs to be changed for one that shall present such stimuli to his brain as shall call forth the desired right activity. By this method the child is brought into touch with those objects and actions that are good and noble. His inspiration is in the direction of the good, and habits of right action become fixed in his organism. His nervous mechanism so develops that impulses and motives to good inhibit and control those which would lead to evil.

But there is another side to discipline. The principle of adapting the environment to the needs of childhood is not

always applicable, and the freedom of the best possible environment must have its limitations. Advice and persuasion do not make up for the child's lack of mental and moral energy and self-control. The deficiency must be met by authority, by commands and prohibitions on the part of parents and teachers and obedience on the part of children.

To be fitted for life the child must be taught to obey. As Everett says, "Obedience is in life what subjection to law is in the natural world. It is this that keeps the planets in their places, and brings seed-time and harvest each in its season; just as it is obedience that makes all the differences between a civilized society and a horde of savages. One who has not learned to obey can hardly find a pleasant or satisfactory position in a world that both physically and socially is held together by obedience."

Man as an individual sustains certain ethical relations. He is a member of society, and a member of the State. These place upon him obligations. The soldier must obey his officer, the railroad engineer must run his train according to the schedule in the making of which he has had no voice. The clerk must be obedient to the will of his employer, and render himself pleasant and obliging to his customers. Every one must conform to the demands of the social life in which he moves, and he must also obey the laws of his country. Obligation is to be met, not with reluctance and distaste for duty, but by an obedience that comes from the inner life as a spontaneous response. Thus antagonisms are reduced, the drudgery of life is lost, and the daily routine is pleasurable. Obedience is a virtue. Herein lies a valuable training. As a discipline, obedience is sometimes positive and sometimes negative; positive when the doing of something is commanded, negative when the doing of something is forbidden. In its nature obedience should be prompt, implicit, faithful, and cheerful. A child should obey, not because he thinks it is best to do so, but because he was so commanded. Obedience should take place at the time directed. There should be no delay. Questioning, to find out the reasons of the command or prohibition, is out of place. Obedience should be first, then may come inquiry for reasons. Sometimes a child cannot understand the reasons why a command or prohibition is placed upon him; sometimes there is not time to explain. Prompt, unquestioning obedience to rightful authority is the rule. But a wise parent or teacher, when practicable, precedes the statement of the command by reasons and explanations.

How shall children be trained to obey? In the same way that they are trained to form any other habit. The trite saying that we learn to do by doing, when rightly interpreted, is of

practical value. The perverse nature may be changed by an unceasing practice of what is right. The habit of obedience is developed by obedience: its growth is hindered and prevented by disobedience. It is a well known principle of psychology that, because of the peculiar construction of the nervous system, the mind has a tendency to act in a way similar to that in which it has before acted. Every act of obedience adds ease and facility to the performance of each succeeding act of obedience. Every act of disobedience increases the inclination to disobey, and makes obedience less likely to follow a command or prohibition. Perfect training would never allow a child to commit an act of disobedience any more than it would permit it to mispronounce words or to use wrong grammatical constructions. When a child does not obey of his own accord it most certainly becomes the parent's or teacher's lot to compel him to act as directed. If punishment of some kind is necessary the duty, however painful, must be performed. The child ought to learn that there are times in which he must subordinate his own individual will to that of authority.

While there is to be no release of obedience, yet the child is not to be wearied and vexed by too frequent commands. To place innumerable limitations upon a child's activities is dangerous. Under such conditions he is constantly nagged and tortured. He grows irritable in temperament, offers defiance to commands, learns to disobey, and becomes antagonistic to authority. When a child's action is undesirable it is often better, as we have already said, to turn the current of activity in another direction than to order the child to cease its action. The method of supplanting an interest leading to wrong doing by an interest leading to right activity is a good one, and cannot be given too much attention. At this point it may not be out of place to introduce a portion of a communication that is of interest along this line: "One afternoon my little baby niece, who was not yet two years old, was left with me. All at once she made up her mind to pull the cat's tail. I told her she must not, and explained how it hurt the kitty. She listened and then walked straight across the room and pulled it again. Again I told her she must not, and if she did it any more I would have to spat her hands. She understood me fully. Then she walked over to the old cat and deliberately gave his tail an extra hard pull. Clearly something had to be done. I spatted her baby hands, and the cat escaped from the room. Not satisfied with giving her the promised punishment, I said, 'now will baby promise not to pull kitty's tail again?' But she would not promise. Again I spatted her hands, and again I said, 'will baby be good now and let kitty alone?' But in a very angry way she said, 'no, I *will pull the kitty's tail.*' I

was more and more puzzled, and knew not what to do. It was the first time in her life she had ever acted that way. Up to this time I had had almost the entire care of this child—and she had always been a good child. I saw that I could go on all day and yet I could not make that child promise to let the cat alone. I gave up that idea. I said, 'Eleanor has been a naughty baby, she must pick up all the scraps on the floor and put every one in the rag bag.' She went to work, and picked up even the threads from the carpet. When she had finished I told her to get her doll. I never mentioned the cat, and she never seemed to think of it. She never tormented the cat again in any way.' Had the child's attention at first been directed from the cat to the rags on the carpet, it is only reasonable to conclude that there would have been no trouble, with just as good and perhaps better results.

Sometimes, however, cases occur in which a diversion of the attention as a method of discipline does not meet the demand. Laws must be made, and violations of law must inevitably be followed by punishment; but rules, regulations, commands, must be reduced to the minimum. The smallest possible number is the rule. When authority asserts itself in the form of commands on the ground of absolute necessity only, and then carries them into effect at all hazards, it develops that obedience which is characterized by promptness, faithfulness and cheerfulness. Thus, at least, two important results follow: 1. There springs up in the child a due regard and reverence for authority. 2. From actual experience the child comes to feel that law made in the home or school is, like the operations of nature, certain and unerring.

As a help to this study a syllabus under the direction of President Hall was issued. 486 persons responded. Opinions rather than facts were asked for. The returns are interesting and often suggestive. Some of the questions with typical replies are noted:

#### PURPOSE OF PUNISHMENT.

In this section three questions were asked, viz.: What is the object of punishments? What do punishments do? Do punishments reform? The different answers to the first two questions are given:

##### *1. What is the Object of Punishments?*

To reform the offender, to prevent wrong doing, to maintain law, to make the offender see his wrong and try to correct it, to improve character, to preserve order, to foster self-control, to deter others from committing the same offense, to prevent future evils of the same kind, to associate a negative tone-

feeling with every idea of evil, to make the pupil a person who can control himself, not to obtain a quiet school but a law-abiding community, to prevent a recurrence of the crime, to lead children to right ways of thinking and acting, to show children that when they do not obey they must suffer for it, to get revenge.

By far the larger number assert that it is to prevent wrong doing or to reform the offender.

### *II. What do Punishments do ?*

1. Punishments arouse fear of wrong doing.
2. Punishments prevent wrong doing.
3. They aid discipline in the school.
4. They breed revenge and hatred.
5. They make pupil conscious of his wrong doing.
6. They serve only as something to be avoided.
7. Prevent offenses through fear.
8. Sometimes arouse fear or hatred of the punisher.
9. They often terrify and make bad worse.
10. They avoid repetition of offense for fear of punishment.
11. Sometimes they cause pupils to be sulky and morbid.
12. Often cause child to think and to start in the right way.
13. Sometimes arouse stubbornness and rebellion.
14. They are a stimulus to voluntary effort and industry.
15. They keep a child from wrong doing until he has formed good habits.
16. They help teach the right, and usually prove why the offense was wrong.
17. Sometimes arouse antagonism, sometimes bring child to his senses, and sometimes injure his feelings so that he simply endures in silence.
18. They may reform by creating a dread of the results which will follow if the offense is repeated.
19. They oppose a continuation of bad conduct, overcome obstinacy, make the child see the wrong in his deeds, and arouse within him resolutions to do better.
20. They do not reform in a direct way, but they keep a child from doing wrong, for fear of another punishment, until he learns that the right way is better for him; or else they cause him to form a habit of doing right by the repetition of the right thing and the omission of the wrong thing.

If some of these results follow punishment then the principle of punishment is wrong or else it is wrongly applied.

Opinions upon the third question, do punishments reform? were about equally divided. Some assert that they do reform, others deny that they have any reformatory qualities.

The two educators of life are pleasure and pain. The former in its discipline is positive; the other, negative. Punishment is pain, and hence is negative in its character. Its office is to combat error, to repel from wrong, and not to invite to virtue. Reformation is positive in nature. It implies a change of character and moral disposition, and always goes from the worse to the better. Punishment acts upon the child as a deterrent to prevent a future violation of the parental law. It holds him in check, that is, restrains him from committing the offense until other agencies shall so act as to lead him to form habits of right activity, and until those certain tendencies to do wrong have ceased to exist. Hence punishment is subservient to reformation in that it weakens the seductive motives.

Herein lies the province of punishment in the field of education. The current of the child's inner activity is moving in a wrong direction; punishment comes in to interrupt it, and the child is offered an opportunity for self-reflection. If the punishment was in all cases justifiable, as a result of this introspection, the child discovers that the pain or loss which he has suffered was deserved. The punishment goes no further. That it may lead to improvement, that the educative process may be complete, it must be supplemented and supported, on the part of the educator, by those positive factors which shall arouse the better part of the child's nature.

#### KINDS OF OFFENSES AND PUNISHMENTS.

In reply to the question as to what kinds of offenses should be punished and what not punished, the replies form two classes: there are those in which the offenses are distinctly named, and there are those which are more indefinite and general—particular offenses not being named. However, they both indicate that intentional offenses, or those in which the offender shows a willful disobedience, are punishable; and that unintentional offenses are to be corrected but not punished.

Some returns, in which the replies are of the general class, are as follows:

##### *I. Punishable Offenses.*

1. Any offenses committed intentionally, persistently or by repeated carelessness, should be punished.
2. Such offenses as are purposely committed should be punished.
3. Any form of willful disobedience and persistent carelessness.
4. All offenses that have a bad influence on the offender or school are punishable.

5. All offenses should be punished. None should go without rebuke, although in practice many must.

6. All offenses which influence and destroy the perfect harmony of the school, and those which destroy the morals of either pupil or school.

7. Those offenses should be punished which are likely to become habitual, and those that interfere with the general good of the home and school.

### *II. Offenses not Punishable.*

1. I think the only offense which should ever go unpunished is that which was committed unintentionally by the pupil.

2. Those committed through ignorance, weakness, fright or similar causes, should not be punished.

3. Those offenses should not be punished which are committed by the scholar when he is really trying to correct the fault.

4. Slight offenses which are natural to children, and from which no harm can come, do not need punishment. It is useless to punish children for moving around in school unless it is carried too far. It is a good sign if a child is lively in school.

The following is a list of the offenses that were particularized:

#### *I. Punishable Offenses.*

Teasing smaller or poorer children, running away, showing temper, irregularity, maliciousness, want of punctuality, habitual wrong doing, swearing, using vulgar language, bullying or teasing, using tobacco, lying, cheating, impoliteness, tardiness, untidiness, fighting, slander, throwing notes, any mean or revengeful act, dishonesty, insults, neglect, indolence, chewing gum, undue liberties, usurpation, false accusation, personal injury, disregard for study, disregard for the good order of the school, inattention, conspiracy, uncouth manners, disrespect, improper habits, speaking evil of the school, immoral conduct, defamation, disobedience, impudence, viciousness, rudeness, willful offenses, cruelty, obstinacy, insubordination, noise, immorality, whispering, copying, disturbance, carelessness, mischievousness, disrespect for teacher, ridiculing any student, marking or in any way injuring books or buildings, thoughtlessness, stealing, quarreling, deception, offenses to annoy the teacher, offenses liable to have bad effects upon the other children, offenses forbidden by penal rules.

#### *II. Offenses not Punishable.*

Dropping rulers or paper, moving around, offenses committed unconsciously, unintentional disturbances, whispering, acci-



dental offenses, bashfulness, timidity, first offenses, tardiness where there is a good excuse, faults that the child does not know are wrong, an offense he is not likely to repeat, an offense due to weakness, where there is regret as soon as the offense is committed, mere overflow of animal spirits, offenses committed from lack of self-control, ceaseless activity, offenses committed through fright, offenses of which the teacher has not previously spoken, thoughtlessness, some things done for fun, offenses for which the child is not wholly responsible, when the punishment would do more harm than good, nervousness, excitement, slowness, trivial offenses.

In reference to the question as to what kinds of punishments are the most suitable, the returns form two classes also : those in which the punishments are characterized by use of names, and those replies which are more general in their assertions.

The following notes are from the latter class:

1. A little impersonal talk to the whole room may be sufficient punishment.
2. Those which cause some wholesome thinking on the part of the punished.
3. Those which are inflicted for the sake of reforming and not merely to punish.
4. Those which bring the desired reform in the quickest, surest way.
5. The most suitable kinds of punishment are those that appeal to the moral sense.
6. Those which seem the natural outcome of the offense. They should appeal to heart or intellect.
7. Those which lead the children to see that they, not the teacher, are to blame for the trouble they are in.
8. Slapping, spanking, and taking away of things, best for cases between six months and two years.
9. Those which show the pupil that the right way is the best for himself and others.
10. Those which the child in a way brings upon himself.
11. For being late, keeping after school. A failure in lesson caused by laziness, obliging to get it. If two fight both equally to blame, strap both. A stick in the mouth will sometimes prevent a small child from talking.
12. As a rule punishment should be something that would induce introspection and antagonize as little as possible. Nothing should be dwelt upon to the extent of making the child nervous. Any violent punishment should be abstained from for physical reasons.

The following list contains the names of all the different punishments mentioned:

Keeping after school, shaking for boys, tasks, giving a front

seat, appearance of slightly cooled affection, reprimanding, changing the seat, confining, depriving of things cherished, mental punishment and not bodily if the child can understand it, giving the child no attention, moral suasion, lowering of standing, separation, neglect, speaking to a child before his class, letting the child take the consequences of his act, forfeiture of abused privileges, confer privately with the child, restoration of injured articles, humiliation, suspension in extreme cases, a frown, a severe talking to the child, sending a note to the parents, whipping knuckles with a ruler, causing to stand in front of the class, sending from the room, spanking, keeping in at recess, requiring special examinations, whipping in extreme cases, depriving of the play-time, making the child meditate on the offense and write his meditation, isolation from the school, writing a word a great many times, scolding, reproof, dispraise, tying up the hands, tying a clean cloth over the mouth, taking away the books of one who will not work, close questioning in recitation, slapping the hands; gentle, kind, heart-to-heart reasoning; spanking, explaining consequences of certain course of action, expulsion in extreme cases, disregarding a pupil as a member of the class, putting court plaster on the lips, dismissal from recitation, copying or memory work, sending child home, taking credits off the deportment, definite descriptions of definite failures.

The right and expediency of ever using some of these punishments might be questioned.

A communication contains the following: "A thousand children of our schools, below the seventh grade, were asked to describe a punishment received from parent or teacher which they believed was deserved. They were asked to state the punishment, why given, and by whom, and why just." The writer then gives a tabulation of the results in per cents which is as follows: Seventy-two and one-seventh per cent. of the punishments were given by parents, and twenty-seven and six-sevenths per cent. were given by teachers.

The offenses were—

Disorder,  $17\frac{1}{3}\%$ ,  
 Disobedience,  $16\%$ ,  
 Running away,  $12\frac{2}{3}\%$ ,  
 Quarreling,  $10\%$ ,  
 Fighting,  $5\frac{1}{2}\%$ ,  
 Rudeness,  $6\%$ ,

Lying,  $4\%$ ,  
 Stealing,  $1\frac{1}{3}\%$ ,  
 Tardiness,  $6\frac{2}{3}\%$ ,  
 Carelessness,  $13\frac{1}{3}\%$ ,  
 Miscellaneous,  $7\frac{1}{2}\%$ .

The kinds of punishment were—

Slapping,  $3\frac{3}{4}\%$ ,  
 Deprived of something,  $3\frac{3}{4}\%$ ,  
 Natural result,  $4\frac{3}{4}\%$ ,  
 Extra work,  $6\frac{1}{4}\%$ ,

Kept at school,  $8\frac{3}{4}\%$ ,  
 Confined to a room or house,  $13\frac{3}{4}\%$ ,  
 Scolding,  $18\frac{3}{4}\%$ ,  
 Corporal punishment,  $41\frac{1}{4}\%$ .

It is recognized that if this work were done with a thousand other children the results might be quite different, and that these per cents are of little or no real scientific importance, yet they do contain an element of suggestiveness. It is reasonable to suppose that as a rule each child described the punishment that was the most prominent in his mind. It may have been the one most recently received, or it may have been some unusually severe punishment. Also the offense may have had some characteristics about it which readily called up the idea of its punishment.

#### OFFENSES NOT LIKELY TO BE REPEATED AND THOSE DUE TO WEAKNESS.

Those offenses that are due to weakness and those that are not likely to be repeated, by far the larger number would let go without punishment. Some few would inflict a penalty for such cases of wrong doing. More would punish for weakness than for an offense not likely to be repeated.

Emerson E. White says that in the family and in the school "punishment is a means to a future good; and where there is no possibility of future offenses, there is, to say the least, no necessity for the punishment of a past offense. Neither the vindication of justice nor the ill deserts of the offender call for the infliction of punishment by parent or teacher when nothing in the future demands it. It is the possibility that the offense, if not punished, may be repeated or that others may be thus influenced to commit, that justifies its punishment."

Some characteristic replies are noted:

1. It would be best, if possible, to remove the weakness before trying to control its results by punishment.
2. Punish if there is a possibility of strengthening the weakness by doing so.
3. If the offense is due to weakness, punishment is not in order. We should rather seek to help the child to overcome the weakness.
4. If the offense, which is not likely to be repeated, does not affect others, it might not be punished, but if others may commit the same offense, the first one should be punished.
5. I think a child should not be punished for an offense he is not likely to repeat; but I have known in some cases that punishment of offenses due to weakness has done away with that weakness, at least to some extent.
6. A child should not be punished for an offense he is not likely to repeat; he should, however, be corrected at the time. Neither should one be punished for a weakness, but it is the teacher's duty to help a child overcome a weakness.

7. A child should be punished for an offense that he is not likely to repeat, otherwise he will commit other offenses by way of experiment; also for one that is due to weakness, if a serious warning can be called a punishment.

8. It depends upon the kind of weakness. Suppose the boy's eyes are poor, and as a result of this he is not able to get his lesson. I am sure no punishment could correct that weakness, and for that reason the child should not be punished. I knew a boy who stuttered very annoyingly. The teacher always made him stop talking when he began to stutter. She even spoke harshly to him and sent him from the class. The result was that the boy overcame his weakness to a very great extent.

#### FAULTS DUE TO THE CONDUCT OF OTHERS.

The question was asked—should children be punished for faults that have been the outgrowth of the parent's or teacher's conduct? 118 of the replies were negative, and 80 were affirmative. Only a few of those who said that they would not punish a child for a fault thus acquired gave any reasons in connection with their answers. The others quite generally did. If a child has a bad habit it should be corrected, although it may be due to the conduct of some one else. If punishment is necessary it should be given. However, the child should not be chastised by the one whose fault he has copied.

1. I have seen such faults corrected by punishment in a number of cases.
2. Not until he has been educated to see those faults as wrong, and that he must avoid them.
3. A child cannot be held responsible for things which he sees those whom he looks up to do every day.
4. Pupils should never be punished for others' conduct. They should be punished only for their own conduct.
5. A child should be held for the part of the offense for which he is responsible, the parent or teacher for his part.
6. Children should be punished for faults that have been the outgrowth of the teacher's or the parent's conduct, but not by the teacher or parent who encourages the fault.
7. I have seen a boy who had the habit of using bad language, and whose home associations fostered rather than checked the fault, made very careful of his speech when in school by one whipping.
8. In most of the homes from which our pupils come there is coarse and vulgar talk, and often fighting. The children learn to think that such things are not wrong; at school they are told better; if they persist, whipping on the hands with a leather strap is usually sufficient; of course with this there are talks.

9. Children who have acquired habits at home which cannot be tolerated at school should be led to resist the wrong, and if kind reasoning and command will not accomplish the end, I would punish severely and make the pupil refrain from doing those things while at school, even if I knew that he did so only because he was afraid of the punishment.

10. It would seem to me wrong for a parent or teacher to punish a child for something for which he himself is to blame, but not entirely wrong for a teacher to punish a child after due warning, for something for which a parent or some other teacher is to blame. Wrong is wrong, and must take its punishments with some allowances for circumstances. I knew a mother who allowed her boy to go to school every day without combing his hair. She was more to blame than the boy, nevertheless I sent him home to comb his hair. I kept children in for being tardy when their parents did not get up in time to get their breakfast, but it did not last long. I have punished children for swearing when their own father swore. I have punished them for lying when they were brought up to lie. I think I did them good.

#### TASKS AS PENALTIES.

The majority would not use tasks as penalties. 251 answered the question. 82 reply in favor of the practice, while 169 are disposed to condemn the custom of making tasks serve as a means of inflicting pain.

Those who object do so upon psychological grounds. Here the law of association is to be regarded. Invariably there should be set up in the child's mind a close connection between the offense and its consequent punishment. In the imposition of tasks as penalties the punishment is associated, not with the offense, but with the task. The result is that duty by being affiliated with punishment is made unpleasant, unattractive and undesirable. It is a good way of training a child to put a low estimation upon the practical value of the work of life. Horace Mann says, "The association of pain should always be connected with the wrong done, and never with the duty omitted. It thus becomes unconsciously an auxiliary for the right. So, on the other hand, the reward of virtue should be always associated with virtuous conduct, as though the former grew naturally from the latter."

The following selections were made from the returns:

1. Good, especially if pupil is lazy.
2. They remind the child of his misdemeanor, and also benefit him mentally.
3. No, the child learns to look at his lessons as tasks, and hates them accordingly.

4. Work should be made a pleasure to a child and not a punishment.

5. I would use such tasks as committing to memory, as they will often benefit them in after years.

6. Only when it bears some relation to the offense.

7. Yes, but would be careful to make no task unpleasant by so doing.

8. No, unless it would be to have a child pick up something he had dropped or put into place something he had misplaced.

9. Pain and loss should always be associated with the wrong done and not with the duty; pupils should never associate suffering with any school duty.

10. Any kind of tasks are apt to create a grave dislike for work. Being obliged to do nothing would be preferable.

11. I would not use tasks as punishments, for when a child knows he is doing a task as a punishment he does not do his best, and it causes a bad habit to be formed.

12. Tasks as punishments are often used with good results; for instance, the task of writing the spelling lesson so many times is often used. There may be more than one benefit from such.

13. I would use tasks for punishments only in cases where the fault is one of laziness or inattention to the tasks at the proper time. If used as punishments for everything, love for the task in itself and pleasure in it is lost.

14. I would not use tasks as punishments because it would create a hatred for that which should be done cheerfully and gladly because of its own value and the value to the person doing it.

#### THE SAME PUNISHMENT FOR ALL CHILDREN FOR THE SAME OFFENSE.

For the same offense none would punish all children alike. Special cases require special educational treatment. The child is an individual. In some characteristics he resembles all other children; in others he differs from all other children. These differences make the child that certain particular individual that requires some treatment peculiar to himself. In the family individual treatment is possible. Thus far in the schools it has not been altogether possible. Here the individual too often suffers by being part of a system that overlooks the child as an individual in its endeavor to adapt itself to the needs of the majority. The following notes are taken from the returns:

1. Punishment should vary with age and disposition.

2. A punishment that would be beneficial to one would have the opposite effect upon another.

3. A punishment which would seem slight to some children would be very great to a very conscientious child.

4. Children have different dispositions, and would look on the punisher differently, therefore the end would not be attained in all cases.

5. It is the cause that should be looked after and not the offense. The same offense may come from altogether different causes.

6. All children should not receive the same punishment for the same offense; their disposition, health, home-training, the provocation, hereditary traits, etc., have much to do with the amount of blame they deserve for their acts.

7. If there is a rule that certain things when committed will be punished in a certain way, then every one should fare alike, but if there is no such rule, I would say that the punishment would depend a good deal upon the child with whom you are dealing.

8. I don't think the same punishment for all children is best unless all acted in the same way under the same visible circumstances, as, *e. g.*, all running out of the yard at recess, when there was a rigid rule against it, to get cards or samples thrown by some advertiser. If differences were made the children would probably think it partial, but if circumstances differ at all, a wise teacher might explain to even small children that some know better, some try harder, and some are weaker in certain ways than others, therefore some deserve more or less than others.

#### THE DISCIPLINE OF CONSEQUENCES.

To Rousseau is due the credit for the theory that children should be left to the natural consequences of their wrong doing. The idea is at least superficially pleasing. Mr. Herbert Spencer has expounded the theory most fully and emphatically. "It is the function of parents," he says, "to see that their children habitually experience the true consequences of their conduct, the natural reactions; neither warding them off, nor intensifying them, nor putting artificial consequences in place of them." He would have the child who spoils a new suit go with shabby clothes; toys destroyed should not be replaced by new ones; and the child who destroys the belongings of another should make reparation to the injured party. In school arrangements should be made for assigning each one's merit on an impersonal plan, the teacher's bearing in the matter not being manifest. The rules and regulations are so fixed and understood that any neglect or failure to act in accordance with them punishes itself. This theory is attractive, but just how it could be carried out in practical school work is not clear.

If a child's wrong actions are punished by their natural reactions, Mr. Spencer claims, among other things, that the child by actual experience with good and bad consequences will acquire a rational comprehension of right and wrong conduct; that the child will recognize quite clearly, at least, the justice of the penalties; that the child's temper will not be greatly aroused, and that there will be developed between parent and child or teacher and child a much happier and more influential state of feeling.

In relation to this method of punishing, the syllabus called for answers to the three following questions: Do you believe in the "discipline of consequences?" How far can it be carried? Give cases of making the punishment fit the crime.

The following, culled from the reactions of different individuals, will serve as examples of the replies given:

*I. As to Belief in the Discipline of Consequences.*

1. In petty cases the discipline of consequences is sufficient, but this mode of punishment cannot be carried beyond a certain limit.

2. To a certain extent. It is one of the laws of life, and one that a child's training should teach him to recognize; but there are many instances where it would be better to shield him from the effects of his mistakes.

3. To a certain extent. There are cases in which discipline of consequences is used to advantage, but usually it is a slow and dangerous means of correction.

4. If children could be led to a high standard of subjective control, "discipline of consequences" is sufficient to solve the whole problem. But we would scarcely let a creeping child learn to discipline self through consequences. However, there are steps all along the line leading to a higher plane, and one may be taken at a time. Many a *good* intending mother has wrecked her child's happiness by not allowing him gradually to discipline himself through consequences.

*II. Extent to which it may be Carried.*

1. Not to the extent of causing the child physical, mental, or moral harm.

2. Only as far as the child shall understand the consequences.

3. If a boy smokes I would not let him take the consequences without seeking to cause him to stop before any evil consequences arise.

4. It can be carried as far as to let the child take a grade again.

5. If a child plays with the fire despite all warnings, I would allow him to get a *slight* burn from it.



6. It may be carried so far as to become a positive injury to all concerned.

### *III. Cases of Making the Punishment Fit the Crime.*

1. Children in school who misapply or destroy any article should be deprived of it.

2. Lack of punctuality could be treated easily by the mother by specifying the exact time for departing on a pleasure trip; the person tardy should be left at home.

3. Making a child sacrifice his pleasure hours for tardiness, give up his toys for playing with them in school, close questioning in recitation when he has neglected his lessons.

4. A little girl pulled the hair of the little girl in front of her and made her cry. The teacher came and made the girl whose hair was pulled pull the first girl's hair.

5. I was a little girl of six years, and my one daily task was to wipe the dinner dishes which my sister had to wash. I was slow and awkward, while my sister was quick and active, so it followed that she always finished washing the dishes while I was left far behind; so day after day I had to turn out the rinse water and wipe the pans the dishes were drained in, in addition to wiping the dishes. Meantime my sister would go to the play-house or swing, so I always felt ill-used and said to myself that she always got the best places and best things. All at once it came to me that if she could be hindered in *her* work that would give *me* a chance. It happened that we had mashed potatoes and beefsteak and gravy for dinner, and, as every housekeeper knows, the utensils in which such things are cooked are hard to wash unless they have been left during the dinner hour with water in them. I hurried into the kitchen and hastily put these utensils into the hot oven and closed the door. Then I ate my dinner and wiped the dishes in a very hopeful spirit. Just as my sister started to turn out the dish water I shouted, "Oh, you are not through washing dishes yet; look in the oven! *Look in the oven!*!" She looked, and went and told my mother of my prank. Things were taking a different turn than I had planned. My mother came into the kitchen and looked at the cooking utensils in such a dreadful condition. She didn't scold, but only said, "Well, Eva will have to wash them." Oh, it was dreadful! but I went to work and scraped and cried and cried and scraped all that afternoon. Occasionally my mother would come out to see if I had got them clean, but would say "no," and go back. When at last the task was finished—my back, shoulders and arms aching, my eyes red and swollen with weeping—my apron all splashed with water—I was a sorry sight to see. But the lesson! I never forgot it. *I* fell into the pit *I* had dug for my sister. How

many times I have thought that certain persons were learning the lesson I learned so long ago, but it has staid by me and helped me in many, many ways. I have always been thankful that my mother was firm and made me do the task well.

About 90% of those who replied to the questions assert that the child who has done wrong may be left to the natural consequences of his act, but there is, however, a general agreement among them that this method of inflicting pain has its limitations. Undoubtedly in certain cases the method is followed by good results. The untruthful boy by being steadily disbelieved *may* become convinced that people have lost confidence in him, and that it is bad policy to tell or act lies. The child who slanders and suffers in return defamation, or at least a loss of esteem, *may* think wise to cease making malicious reports. The juvenile communist who has some of his own childish property taken from him *may* decide that his theory is not very good after all. A judicious use of the method, in connection with other methods, helps to lead the child to perceive the difference between right and wrong activity and to choose to act rightly.

Nature is a good disciplinarian upon which a sensible parent or teacher always relies for aid in the government of the young. But to invariably trust to her ways of chastisement is folly. Often her results are too serious to be used for discipline, and then again her processes are too slow for the child to comprehend. Too frequently is proven the fact that warning against the violation of some of nature's laws was not the fulfillment of the whole duty.

#### BREAKING THE WILL.

The syllabus contained the question: in extreme cases of obstinacy do you believe in "breaking the will?" There were 176 replies; 92 answered in the affirmative, and 86 in the negative. This wide difference of opinion may be due to the fact that the expression "breaking the will" was differently interpreted. Some regarded the term as meaning a tearing down of the will power, and hence a destruction of the individuality, while others looked upon it as meaning a yielding of the will to the wish or command of authority without any destruction of the individuality.

The following have been selected as representative replies:

1. The will must be taught to bend, but must not be broken.
2. Never break the child's will, but in some way get around it.
3. Do not break the will; remove the resistance. I think often kindness does much to break the will.

4. To break one's will I should think would be to break his personality, but yet in extreme cases I believe it can be done with good effect.

5. In extreme cases of obstinacy break the will if you can, once will be sufficient, but it would be as well to avoid conditions when great obstinacy would be aroused.

6. I do not believe in breaking the will in any case. I think the child would better have a strong will than be perfectly obedient.

7. I believe in breaking the will in extreme cases of obstinacy, for if the will never be broken the child will always "have his own way" with bad results almost assured.

8. The child's will should never be broken, for a child is then too weak to resist the common temptations that lie in its path, and also lacks ambition to be successful in any career.

9. In extreme cases breaking the will is necessary; some have very bad wills, and if not broken will amount to nothing. Making children do or not do makes them strong, not weak as those are who do only as they please.

10. The following is the experience of a father with his three children. It is given as related by him:

"One son was about two years old when he first resisted my will. It was his bed time, and he was dressed for the bed. His milk was prepared for him to drink before retiring. It was too warm, and he was made angry by it. When it was sufficiently cooled for him to drink he would not have it. I tried to coax him to take it. He knew what I wanted, but refused in anger. I slapped his bare leg and asked him gently to take it. He was more rebellious still. Again I slapped his leg on same place a little harder, asking him gently to take it. He cried in still greater anger, more obstinate still. Again and again I slapped the same spot, harder and harder, all the time gently asking him to take the milk. It seemed for awhile that he would never surrender, but at length he gave up, his muscles relaxed, he drank the milk, and of his own accord kissed me, stopped crying, went to bed and fell asleep sweetly. He never resisted my will again, and did not seem to remember the punishment.

"The second son had an experience much like this. He was lying on the floor before bed time, and I asked him to get up. For some reason he refused. I slapped his bare leg. He would not get up, but begged me to take him up. I required him to rise without my helping him. He was angry, and refused till I had slapped his leg four or five times, then he yielded, kissed me, and went to bed. Once afterwards he resisted for a few moments. A little punishment this time was sufficient, and this was his last refusal to mind.

"My daughter never stood out against my will when she saw the stick coming, but would do the thing required, but do it in anger. Her body yielded, but her will did not. Then of course I was powerless to break her will. When about 10 years old she had been disobedient in doing what was forbidden, and had to be punished for what she had done. She was angry, and I feared her will was bound to be rebellious. I was troubled, and after I had punished her in a way to frighten her more than hurt her, I talked with her very seriously, told her how badly I felt, and then in tears and grief I prayed with her, telling God all about the case in a simple manner. She was touched by this prayer, and broke down. From this hour she appeared different. I had gained her then for a right life."

The child is not to lose his will, nor is he to have it absorbed in the will of a superior so that he has no will of his own. He is to be trained to choose the parent's or the teacher's will as his will, and accordingly render obedience strongly, positively, gladly, freely. This is not merely submission; it is more. It is the recognition of the higher authority as the wisest and the best.

#### LAPSE OF TIME BETWEEN THE OFFENSE AND ITS PUNISHMENT.

1. The time between the wrong doing and the punishment should be as long as possible and not be forgotten.
2. Long enough time for the teacher to learn all the circumstances of the case.
3. The punishment should immediately follow the offense if possible. It makes a more vivid and lasting impression.
4. An offense should be punished while the memory of the deed is fresh, but not so soon as to be influenced by the teacher's anger.
5. The time that elapses between the offense and the punishment makes little difference as far as its corrective effect is concerned provided the offender feels that it will surely come.
6. Punishment should immediately follow the offense, but a child should always have a chance to defend itself or give an explanation of his conduct if any can be given.
7. Sometimes a prompt punishment is best, again time to think over the matter or to allow the pupil to weigh the matter himself would work wonders.
8. A sufficient time should elapse between the act and the punishment to allow the child to see the error and acknowledge, but not so long that the act and punishment stand as two distinct events.
9. The punishment for an offense should not follow immediately, because the child should have some time to think

over it, and should straighten up his own accounts. If he is unwilling to do so, then the teacher should straighten them up for him.

10. Till all anger in the teacher has subsided; by delaying punishment for a day or more the teacher has an opportunity in his cooler moments to determine how severely he should punish, and the culprit has time to reflect upon his crime and the degree of punishment he deserves.

11. The punishment should be inflicted as soon after the offense as possible, considering that the teacher fully knows why he is punishing, has decided on the best punishment, and the pupil knows why he is being punished.

12. The time that should elapse between the offense and the punishment depends upon the nature of the offense, and also upon the disposition of the wrong-doer. If a boy that is quick in his make-up commit an offense, he should be punished at once, or in case of rebellion he should be punished at once, but if he commit some deed that would be well for him to meditate upon, punishment should be delayed for a time.

13. It is best not to let too long a time elapse between the punishment and the offense. A very small child is apt to forget the reason for which he is punished if too long a time elapses. If the offense and the punishment come close together he is more apt to connect the two, and they will be more impressed upon him. Contemplation of the coming punishment might be a good thing, however; the dread, to me, always meant more than the punishment.

As to the length of time that should elapse between the offense and its consequent punishment, the general consensus of opinion is that it should be as short as possible, but long enough to ascertain and consider all the facts in the affair, and to decide upon the punishment best adapted to fit the case.

Here it is wise not to violate the law of association. The closer and deeper the connection of the offense and its punishment, the more vivid and consequently the more lasting will be the impression. The longer the time that elapses between the offense and the administering of the penalty, the less likely are the connections of the two mental experiences to persist. The two should go into the mind together as nearly as possible, that they may not stand as two distinct or partially distinct events. The smaller the child the shorter should be the time.

While the foregoing statements are true, there may be, nevertheless, exceptions to the general rule of making the punishment closely follow in time the act of disobedience. Frequently, especially in older children, the infliction of a penalty may be deferred for a time with good effect if there is aroused in the child a sense of having done wrong and the feeling that

the punishment will surely come. But in such cases the suspense and dread is really, as it should be and must be, a part of the punishment. The postponement has acted to strengthen the association of the act with its penalty.

Again, the child prefers the immediate to the future. He lives in the present, and thinks little of giving up the pleasure of a present wrong doing that he may avoid pain in a distant future. In other words the temptation to offend is present; the punishment is to take place in the future. The circumstance not only weakens the effect of the punishment in that it makes a feeble impression on the mind, but it also makes its infliction less certain in that it affords fresh opportunities of escape. Hence it is clear that the severity of the punishment must be increased in proportion as its distance is increased in point of time; and, on the other hand, it is also true that as the distance is decreased in point of time, in the same proportion may the severity of the punishment be decreased.

#### SLIGHT BUT SURE PUNISHMENT.

1. A sure punishment, though slight, is more effective than a severe, partially administered one.
2. Scholars respect a teacher who never threatens but does.
3. To my mind slight but sure punishment is much more effective than extreme periodical severity.
4. The principle of slight but sure punishment has in nearly every case I know of been successful.
5. I think the principle of slight but sure punishment is more effective than extreme or lax rule.
6. A sure but slight punishment often does quite well with certain classes of pupils, while with others it has little or no effect.
7. If a child knows that some punishment, however slight, is to follow an offense it has an effect, a sure effect.
8. I think the principle of slight but sure punishment is not advisable, as a child soon gets so he pays no attention to a slight punishment.
9. The principle of slight but sure punishment is not effective; because if a pupil knows the penalty of a certain act, and especially if the punishment be slight, he is often willing to take the penalty as if in payment for the wrong act.

Uncertainty and severity are not effective principles in punishment. Severity, while it may be most effective in producing outward conformity, too often acts prejudicially upon the child's disposition, breaking his spirit or leaving him more inclined than ever to do wrong.

On the other hand too mild punishments do not produce the desired results, and are often treated with contempt; sham punishments are both ridiculous and harmful.

Certainty is an important factor that is too often left out of discipline. Under ordinary conditions the pleasure to be gained from an act of disobedience seems more certain to the young offender than that the act will be followed by the infliction of pain. The hope of impunity is the accompaniment of disobedience. If we had a measure of pleasure and pain, and it were possible to make the pleasurable effects of an offense and the painful effects of its punishment equal, and the punishment were absolutely certain, the child after a little experience in wrong doing would cease to do evil. The child would soon learn that disobedience brings forth no fruits to enjoy, and that the shame of having attempted it must be borne. But since there are always open some opportunities of evasion, it is necessary to make the punishment sufficiently severe to offset these chances of escape. In view of these considerations we may formulate the following principle: The severity of the punishment should be decreased in proportion as its certainty is increased, and *vice versa*, the certainty of the punishment must be increased in proportion as its severity is decreased.

Moral suasion does not always accomplish the desired results. Supplemented by positive influences, punishment has an important place as a negative factor in the education of children. When childhood is beset on every hand by restraints, and when punishment becomes a common occurrence, then too often is it detrimental in its effect. When it is carelessly or indifferently administered, its infliction not certain, the reason for it not clearly understood, its severity disproportioned to the degree of offense, its kind not in harmony with the nature of the fault and not adapted to the character of the child, then is punishment ineffective and often times decidedly harmful.

A teacher writes, "When a child is punished I sometimes think that he feels that he has had his way, and that having paid the price the account is now squared. If willing to pay the price he feels that he can do the same thing over again; no finer moral deterrent having been infused by the punishment." There is truth in the statement. It is a common experience for a parent to tell a child not to do a certain thing and that if he refuses to obey punishment will follow, and then to have the child straightway act in the manner forbidden. Such cases suggest that the principle of punishment has been badly applied rather than that the principle itself is wrong. The threatened punishment may have been too mild, or at least it may have appeared so to the child; it may have been placed too far in the future for him to realize its full significance; past experience in similar circumstances may have led the child to doubt its certainty; in the child's mind the act and its punishment may not have been associated. For some reason the pleasure of the

wrong action and the possible attendant suffering seems preferable to the rendering of obedience. To make it otherwise the child must *really* feel that the punishment will surely and promptly follow wrong doing, that there will be no doubt about it, and that the pain or loss will at least equal the pleasure to be derived from the committal of the act. Under such conditions one experience will very likely prove sufficient.

Already in this article it has been suggested that the interests of childhood should be so directed as to give the largest possible freedom, and thus offer few occasions for disobedience, making punishment a thing of infrequent occurrence. It may here be stated that there are four classes of wrong doing for which chastisement is out of place. The first class consists of those misdemeanors which may be prevented by the substitution of other interests. The second class is composed of those wrong actions that will, without special attention on the part of the parent or teacher, correct themselves. The third class embraces those faults which cannot be corrected by punishment. The fourth class includes those cases in which the evil of the punishment exceeds the future good desired. Hence the only cases in which punishment is desirable are those in which the future good will outweigh the pain or loss of the punishment administered. The reason for reducing the infliction of pain to the smallest possible amount is clearly set forth in the following words of Joseph Landon: "Pain consumes an amount of nervous energy proportionate to its intensity and duration, and thus undoubtedly tends to weaken nervous action. . . . It is in itself non-productive. Every action performed on account of the stimulus of pain is performed in a very wasteful and expensive way, and to the extent of the waste, takes away from the future store of energy for the sake of securing present requirements. Pain artificially induced is in its nature an evil, and where largely employed may be a serious one, apart from any ulterior effects on the disposition. . . . Where the future good overbalances the present loss, it will be necessary to make the sacrifice, unless some more economical and equally effectual means can be discovered; as in the case of disease it is often necessary to employ medicines which weaken before the conditions of future strength can be arrived at, or as destruction by cauterization is sometimes necessary before healthy tissue can grow. The strength, or the new tissues, cannot be given by the medical remedy, but must be provided by other means. We should therefore regard a state needing corporal punishment as a diseased one; and when we apply such means to root out vice or repress an evil habit, we must remember that voluntary right action must be secured by other measures, for this the punishment will not supply. And, just as the bodily strength



cannot be lowered beyond a certain point without great risk, and if it is, this may prove as fatal as the disease, so there is a point, dependent upon the state of the individual, beyond which corporal punishment must in no case go, or the remedy becomes worse than the evil it is intended to cure. It is a grave error to consider nervous force as inexhaustible; it is quite possible to flog a child until he cannot obey; and it must always be a question with us whether the amount of force required can be spared without injury." Our forefathers had but two alternatives. It was for them to use the rod or spoil the child. In the latter part of the nineteenth century human ingenuity has devised an innumerable number of punishments, so that it is now a comparatively easy matter to find a mode of chastisement suited in kind and degree to apply to every offense of childhood. It simply depends upon the tact and judgment of the one in authority to make the selection from a list in which the degrees of severity range all the way from the use of the rod to the appearance of slightly cooled affection.

Commands and laws may be given in two ways. 1. In one case no penalty of any kind may be distinctly stated, but there is a silent understanding that the violation of the law will be followed by punishment; just what punishment is not definite. In the other case there is set forth in connection with the law the penalty that is to follow its violation. Sometimes the former is the better way. The child feels that if he breaks the command he will have to pay the price. What that is he does n't know. There is a mysterious uncertainty about it that has a restraining influence. He is kept from going astray. Often it is not only wise but necessary to make the penalty known. In such instances the punishment selected should not be rigid, of a hard and fixed nature, neither should its description so limit it as to take away its susceptibility of degrees of intensity and duration. Its quality of flexibility renders it capable of being fitted to all circumstances and to the peculiar individuality of each offender. Thus is reduced the danger of making the punishment in any particular case too excessive or so mild as to be barren of desired results.

A consideration of Bentham is worth noting. It has reference both to the exemplary effects and to the statement of punishments. He looks upon punishment as having two values—a real and an apparent value. The real value is the actual pain or loss that the offender experiences from the infliction of the punishment. The apparent value has reference to the pain or loss which an offender, previous to the time of receiving the punishment or at a time when he may be tempted to offend, thinks would follow the violation of law. The real value of the punishment is the pain or loss inflicted and constitutes the

expense. The apparent value influences the conduct of individuals, and hence is the profit of the punishment. "Real punishments," says Bentham, "ought to be inflicted for the sake of producing the appearance of it. But upon the principle of utility no more than is necessary for reformation and compensation. Every particle of real punishment that is produced more than what is necessary for the production of the requisite quantity of apparent punishment, is just so much misery run to waste. Hence the real punishment ought to be as small, and the apparent punishment as great as possible. If hanging a man in effigy would produce the same salutary impression of terror upon the minds of the people, it would be folly or cruelty ever to hang a man in person." Whenever a rule is made, and the penalty for its violation is stated, it should be clearly presented to the mind that the apparent value of the punishment may be as large as possible. Upon this point Bentham uses the following language: "The notion entertained of a punishment ought to be exact, that is, it should present to the mind not only a part but the whole of the sufferings it includes. The denunciation of a punishment ought therefore to include all the items of which it is composed, since that which is not known cannot operate as a motive." Accordingly those punishments are the best that are most easily learned, most easily remembered, and whose apparent value is greater than their real value.

In giving our attention to the negative side of discipline, we do not fail to recognize the greater importance of the positive side. Altitude, sympathy, power of personal character, the ability to make good and lovable ideals visible and attractive—these qualities possessed by one in authority go far towards inspiring children to love the good, the pure and the beautiful; with these reproof, patiently and kindly offered, becomes a most effective punishment.

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#### BIBLIOGRAPHY.

- ADDERLY, C. *National Education and Punishments*. Longman's, London, 1874.
- ANDREWS, WM. *Punishments in the Olden Time*. London, 1881.
- BARNARD, HENRY. *School Punishments, Historically Considered*. *Barnard's American Journal of Education*, Vol. XXVI (International Series, Vol. I). pp. 325-336.
- BARNES, EARL. *Discipline at Home and in the School*. *Studies in Education*, July, 1896, pp. 26-28; August, 1896, pp. 71-72; September, 1896, pp. 110-111; October, 1896, pp. 149-153; November, 1896, pp. 190-193; December, 1896, pp. 228-229; January, 1896, pp. 270-272; February, 1897, pp. 299-300.

These articles give attention to methods of studying the subject.

- BARNES, EARL. Punishment as seen by Children. *Pedagogical Seminary*, October, 1895, Vol. III, pp. 235-245. Also published in *The Pacific Journal*, November and December, 1895; and in the *Proceedings of the N. E. A.*, 1895, pp. 914-924.
- . Discipline in the Family and in the School, and Punishment for Weak Time-Sense. *Transactions of the Illinois Society for Child Study*, Vol. I, No. 3, pp. 31-39.
- BERTRAM, JAMES G. Flagellation and the Flagellants. Reeves, London, 1877. pp. 544.
- COBB, LYMAN. The Evil Tendencies of Corporal Punishment as a Means of Moral Discipline in Families and Schools, Examined and Discussed. Newman, New York, 1847. pp. 270.
- Dictionnaire de pédagogie et d'instruction primaire. 1<sup>re</sup> partie tome II. Publié sous la direction de F. Buisson. Hachette et Cie, Paris, 1882. pp. 2486-2497.
- Valuable for historical and comparative study.
- EARLE, ALICE MORSE. Curious Punishments of Bygone Days. Herbert S. Stone and Company, Chicago, 1896. pp. 149.
- FREAR, CAROLINE. Class Punishment, *Studies in Education*, March, 1897. pp. 332-337.
- HARRISON, ELIZABETH. A Study of Child Nature—Particularly the Chapter, "Instinct of Justice, or Right and Wrong Punishments." Chicago, 1892.
- HUGHES, JAMES L. How to Keep Order. Kellogg, New York, 1895. pp. 48.
- HUMPHREYS, R. C. Corporal Punishment. Ellis, Boston, 1892. pp. 26.
- JONES, A. The Philosophy of Corporal Punishment. Constable, London, 1859.
- KENNEDY, JOHN. Philosophy of School Discipline. Bardeen, Syracuse, N. Y. pp. 23.
- LANDON, JOSEPH. School Management, Part III, Discipline and Moral Training. London, 1889. pp. 271-360.
- MANN, HORACE. On School Punishments. *Lectures and Reports*. pp. 333-368.
- Massachusetts: Report on the Abolition of Corporal Punishment in the Public Schools. Wright, Boston, 1868. pp. 48.
- McTAGGART, J. ELLIS. Hegel's Theory of Punishment. *International Journal of Ethics*, July, 1896, Vol. VI, pp. 479-502.
- MONROE, WILL S. Child Study and School Discipline. *Educational Review*, New York, December, 1897, Vol. XIV, pp. 451-456.
- MORRISON, W. DOUGLAS. Juvenile Offenders. D. Appleton and Company, New York, 1897. pp. 317.
- New York City: Report on Corporal Punishment. Made to Board of Education, New York, 1877. pp. 34.
- ORCUTT, HIRAM. Methods of School Discipline. Bureau of Education, Washington, 1871. pp. 14.
- . The Discipline of the Home, School and College. *Education*, Boston, June, 1898, Vol. XVIII, pp. 606-614.
- PIERCE, ADELAIDE. Punishments as Described by Children. *American Primary Teacher*, February, 1897.
- RASHDALL, HASTINGS. The Theory of Punishment. *International Journal of Ethics*, October, 1891, Vol. II, pp. 20-31.
- REDMOND, I. L. Children: Their Home Training. London, 1890. pp. 149.
- ROWE, STUART H. Fear in the Discipline of Children. *The Outlook*, September 24, 1898, Vol. LX, pp. 234-236.
- RYLANDS, L. GORDON. Crime, Its Causes and Remedy. London, 1889. pp. 264. Chapters IV, V and VI are especially noteworthy.

- SEEVER, SUPT. EDWIN P. Corporal Punishment. Annual Report of the School Committee, Boston, 1889. pp. 35-49. Also report for 1890, pp. 8-16.
- SCHALLENBERGER, MARGARET. A Study of Children's Rights, As Seen by Themselves. *Pedagogical Seminary*, October, 1894, Vol. III, pp. 87-96.
- SNEDDEN, DAVID S. Children's Attitude Toward Punishment for Weak-Time Sense. *Studies in Education*, March, 1897. pp. 344-349.
- SPENCER, HERBERT. *Education: Intellectual, Moral and Physical*. D. Appleton and Company, New York, 1862. pp. 161-218.
- WALL, W. A. Deterrent Punishment. *International Journal of Ethics*, January, 1898, Vol. VIII, pp. 157-168.
- WHITE, EMERSON E. *School Management*. American Book Company, 1894. pp. 105-294.
- WYMAN, MORRILL. *Progress in School Discipline*. Wilson, Cambridge, Mass., 1867. pp. 48.

## THE TEACHING INSTINCT.<sup>1</sup>

By D. E. PHILLIPS, Fellow in Psychology, Clark University.

The writer once had an opportunity of hearing several teachers of experience in normal schools and colleges express their private conviction that the old adage that "teachers are born, not made," contains a deep element of truth; and that the "backbone" of the real teacher is deeper than generally supposed. A little inquiry made it evident that while not publicly expressed, this feeling in some degree is quite general, and in some places strong enough to react against normal training. Mr. Street, in his Study in "Moral Education," has felt constrained to ask: "Is not a teacher born, rather than made?"<sup>2</sup> Even Mr. Hill, Secretary of the Board of Education of Massachusetts, has thought it necessary to treat this point in relation to normal training.<sup>3</sup> So far there has been no systematic treatment of the subject, and what is herein presented must be considered more suggestive than exhaustive. Here and there fruitful suggestions have been made, of which Spencer's are the most valuable, though inadequate. If religion, society, love of property, play, and various minor activities of man are capable of special treatment from an evolutionary and biological standpoint, surely the greatest agent of mental evolution should form a legitimate subject for such an investigation.

Some points of general acceptance may be stated, and if not serviceable at this point will be so in the further development of the article. Instincts are often periodic in development and serial in character.<sup>4</sup> There are, at least in case of the more important instincts, innate stimuli, the strength and appearance of which depend upon the development of the individual organism. The deepest instincts make for the preservation and welfare of the species. The same instincts are not equally strong in each individual of a species. Man's instincts are so complex, modified, elaborated, and mingled with what passes as

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<sup>1</sup> I wish to express my obligation to different members of the Faculty of Clark University for valuable assistance; especially to President Hall for generous co-operation at all times, and to Dr. Burnham for special assistance and criticism.

<sup>2</sup> "A Study in Moral Education," *Ped. Sem.*, Vol. V, p. 12.

<sup>3</sup> Sixty-first Annual Report of the Board of Education, p. 194.

<sup>4</sup> Morgan: "Habit and Instinct," p. 28.

conscious intelligence, that to speak with such discrimination as Morgan applies to the animal world is not desirable, if possible. "The congenital impulse may," says Morgan, "through experience, be confirmed, modified, or held in check; and such confirmation, modification, or inhibition gives rise to an acquired impulsive tendency." "Impulse is the tendency of an organism to satisfy its needs and fulfill the conditions of its being."<sup>1</sup> If the writer properly interprets this definition of impulse, it expresses all that is necessary to be understood by instinct in this connection. A few fundamental instincts may be the basis of a great variety of tendencies or impulses, and the satisfying of the need accomplished in various ways. It is this that makes the fundamental instincts in man harder to discover than in the lower animals. As soon as the intellect begins to devise means for satisfying these tendencies, attention is centered on such and the deeper impulse is overlooked. The instinct of self-preservation, the social and sexual instincts are each the basis of several well recognized instincts, these in turn perhaps of others; there is also a great variety of mental activity in which no instinctive element is recognized because the multitude of devices obscure the fundamental background and the radiation that has taken place. To keep this in mind and the further fact, to be developed later, that the soul is infinitely larger than consciousness, are of primary importance in the consideration of this subject.

"Doubtless from the day when a human family began its existence, from the day when a mother and father began to love their children, education," says Compayre, "had an existence."<sup>2</sup> Teaching in some form has had a place ever since the animal began to care for her young, and before the male gave the young any attention whatsoever. Neither can the writer agree with this author in believing that these obscure beginnings have no practical value. Instead of "hastening to begin with the Greeks and Romans," he might have found, even outside the older civilizations, valuable suggestions among the more uncivilized peoples, and a true pedagogical insight not inferior to that of these nations. Teaching as generally conceived is too limited in its application. It is generally thought of as the work of a certain class who occupy the school room a certain length of time each day. Again, a fatal mistake is made by regarding teaching as dealing chiefly or entirely with the routine of book information. Indeed we may say that the parent as teacher deals with the fundamentals, while the teacher, as generally accepted, deals with the accessories. Pa-

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<sup>1</sup> Morgan: "Habit and Instinct," p. 156.

<sup>2</sup> Compayre: "History of Education," p. 1.

rental teaching is so effective as to lay the foundation, however imperfect, seldom to be shaken. It is not narrowed down to the so-called intellectual faculties; the mother especially has as her wide domain the soul of her offspring, the very deepness of her own life. The good maternal teacher having no elaborate system to obey and no fixed schedule to complete or pass over, however incomplete, strikes here and there at the right moment. Had the public at large conceived teaching in this wider sense much of the rote and formalism in education would never have crept in, no matter how necessary a certain amount of such may be. Teaching is the development and modification, the confirmation and inhibition of the impulses of the soul, and began with the care for young.

#### I. IMPORT OF CHILD ACTIVITY AND ANTHROPOLOGICAL DEVELOPMENT OF TEACHING.

*Child Study.* In how far the play activity of children is a manifestation of their congenital and instinctive tendencies we shall never be able to know with any degree of accuracy. Groos thinks that it anticipates the future. "Play is the expression of an instinct, whose teleological import is discoverable in most of the movements of animal or child. Play is a '*Vorübung und Einübung*' of activities which soon are to be necessary to the serious life of the adult animal."<sup>1</sup>

In a newly organized kindergarten Miss Sisson made a study of children's plays. They naturally separated into four groups, each group obeying a self-imposed leader. The leader of the more active boys being imaginative, emotional, and affectionate. The second group was composed almost entirely of girls, and their activity consisted in playing either school or house. The leadership was shared by two girls, both of whom were said "to have strong domestic, motherly traits." "Their motherly instincts were greatly developed by the fact that they adopted two little Swiss girls who could not speak English." The plays were adopted either by the compulsory power of the leader, or by special interest in the play itself even when nothing thrust it upon the attention.<sup>2</sup>

"Teacher," says Miss Willard, "is the most popular occupation with the girls, leading at all ages except 13 and 14." Mr. Taylor found that 13 is the only age at which "teacher" does not lead.<sup>3</sup> According to Miss Willard the ruling motive for teaching is love for children. The general motive with boys

<sup>1</sup>"A Study of Puzzles," Ernest H. Lindley, *Am. Jour. Psych.*, Vol. VIII, p. 432.

<sup>2</sup>Barnes: "Studies in Education," pp. 171-174.

<sup>3</sup>"A Preliminary Study of Children's Hopes." Report of State Superintendent of New York, 1896, p. 1,000.

in choosing an occupation is money, save at 14 and 16, when "like it" governs.<sup>1</sup> The steadiness of the philanthropic nature from 8 to 16 is rather remarkable, and is emphasized by both Miss Willard and Mr. Monroe.<sup>2</sup> The two observations include about 3,000 children. Children's honest convictions may roughly express their egoistic and altruistic tendencies; but, if there is any instinctive background, their ability to always determine may be questioned. That the real motive in human action is often overlooked or misinterpreted is quite evident. Several individuals replied that on first thought they supposed they knew what led them to select and follow teaching; after a self-examination they really could not tell.

From the excellent "Study of Dolls,"<sup>3</sup> by Drs. Hall and Ellis, we learn, according to Persius, that the Roman girl, when ripe for marriage, hung up her dolls as a votive offering to Venus, the goddess of fecundity. Girls play with dolls regularly until 13 or 14, abating with the dawn of adolescence. Some play with them much longer, but secretly; some single women, all their lives, and occasionally married women who have no children. The influence on children are reported as "good," "helps parenthood," "cultivates imagination," "fits for domestic life," "develops moral qualities," "cultivates taste," "develops social nature," "helps in care for children," "teaches tidiness," etc. The reflex influence on the child of trying to teach her doll and trying to set a good example appears evident. In order to teach their dolls children learn to read, sew, knit, and many other things that they would not otherwise learn. "Dolls are a good school for children to practice all they know." The authors think that "perhaps nothing so fully opens the juvenile soul to the student of childhood as a well-developed doll play."<sup>4</sup> Things are revealed which the childish instincts tend to keep secret. Indian girls spend as much time and find as much pleasure with dolls as white girls. Schneider, Victor Hugo, and others think doll play the outcropping of mother love and representative of future children. With this Drs. Hall and Ellis do not entirely agree. Prof. Sully, in his late work on "Dollatry,"<sup>5</sup> concludes that, as doll play is chiefly a girl's play, it suggests the maternal instinct, and that "the decline of the doll passion" may in part be due to "the development of a new feeling of maidenly modesty."

<sup>1</sup> Barnes: "Studies in Education," pp. 243-253.

<sup>2</sup> "Children's Ambitions," Will S. Monroe, *N. E. Jour. of Ed.*, June 18, '96.

<sup>3</sup> *Ped. Sem.*, Vol. IV, pp. 129-175.

<sup>4</sup> *Ibid.*, p. 162.

<sup>5</sup> *The Contemporary Review* Jan., 1899.



*Some Questionnaire Results.*<sup>1</sup> Attention must now be given to some points in the returns received in answer to the following syllabus on The Teaching Instinct:

*I. Teaching among Children.* (a) Describe teaching of dolls, toys, animals, or other children; "playing school;" rapid spread of certain forms of language, games, stories, fads, etc., among children. (b) Give nature and cause of such teaching. When most common? Does its nature change? (c) Is it prompted by a desire for superiority, leadership, necessity in play, or by mere pleasure in story-telling.

*II. Cases of Leadership.* (a) When, in what way, and how strongly manifested? State if such leader is an only child; if grown, what is now his or her nature and calling? (b) State anything exceptional in the childhood of any great leader. (c) Reflect upon your own life as to your desire to learn any particular thing, for any special purpose; (d) or passion to teach or preach; when and how originated? when strongest? (e) Excepting bodily movements, what is the first instruction given by parents? in line of some of the arts, occupations, morals, religion, etc.

*III. Concealment or Limitation of Knowledge.* (a) Describe persons having a passion for secrets, to belong to secret orders, use of cryptograms, and symbols designed to conceal. Cases where the promise not to tell seems to be the strongest incentive to tell. (b) If not influenced by personal consideration, money, praise, etc., is there an instinct to conceal a good thing?

*IV. Teaching Instinct.* (a) Describe persons having a natural aptness to teach. State the best marks of such. Can it be improved by normal training? Are such teachers influenced much by books, lectures on teaching, or do they devise their own methods? Give examples. How many teachers in your school possess a natural teaching faculty or instinct? How many do not? How far can normal training take its place? Do books, programmes, school regulations, professional conformity, etc., operate against the free development of the teaching instinct? How? (b) Describe your ideal pupil, ideal teacher. (c) What do you most and least like to teach? why? How do you keep up enthusiasm while teaching the same thing over and over? What inspires you to improve?

*V. Incentives to Teach.* (a) What per cent. of teachers follow their profession chiefly for gain? to do good? for praise or power? for pleasure in imparting knowledge? (b) Do you consider the work more arduous than other callings giving equal pay? If so, what are your compensations? (c) Which is the stronger, the desire to convey information or to exert an influence? Why do you desire to teach the young? (d) Describe a person who is continually correcting or giving advice.

*VI. Training of Teachers.* (a) State the greatest values of normal

<sup>1</sup>For the data obtained the writer wishes to express his thanks to the large number of persons who contributed valuable individual reports, and also to the following, who collected masses of data: Dr. Gertrude Edmund, Superintendent of the Training School, Lowell, Mass.; Principal George C. Purington, Maine State Normal, Farmington, Me.; Prof. M. V. O'Shea, University of Wisconsin, Madison, Wis.; Principal W. E. Wilson, Rhode Island Normal, Providence, R. I.; Prof. G. W. A. Luckey, University of Nebraska, Lincoln, Neb.; Prof. John C. Shaw, West Liberty Normal, West Liberty, W. Va.; Principal John G. Thompson, State Normal, Fitchburg, Mass.; Mrs. Eliza Blaker, Indianapolis Free Kindergarten.

training, its evil effects, the modifications needed, and the part of work that students are most interested in. (b) Should attention be centered chiefly on subject matter or the child to be taught? (c) Does knowledge, normal training, experience, or the teaching instinct, help most in preparation for teaching without a text-book? State cases where teachers, like Socrates, turn any experience into a lesson.

*VII. Teaching and Leadership among Animals.* (a) State cases, amount of dependence, effect if removed; (b) where animals show evidence of teaching their young; (c) where isolation of young animals weakens or deprives them of their natural traits; (d) animals trained in things not common to their species; do others imitate the trained? (e) imitation of each other, of a human being?

Besides the usual supply sent normal schools, colleges, and other institutions, about five hundred personal letters were addressed to principals, superintendents, and kindergarten teachers, requesting a special consideration of the chief points. More than a third have been kind enough to reply. So far 171 replies have been received from persons whose experience ranges from 4 to 29 years. On account of their superior worth on a subject of this nature these individual returns will be considered independently of the 464 coming from normal schools and teachers of less than 4 years of experience, and will be designated as *individual* returns. The best manner of presenting this material will be not as a whole, but as the different topics on which each bears, develop.

The topics to be discussed in this connection are *Teaching and Leadership among Animals*, and *Teaching among Children*, with their sub-questions as given in the syllabus. Most of the cases concerning animals are of such a common nature, especially of leaders among animals, as not to deserve quoting. They point to the common fact that nearly all animals have a special leader on which the others so much depend that all seem lost when such is taken away; and there is no settled activity until another in some way assumes the leadership. This tendency of the young in a brood or litter, or groups of animals, to depend upon one of their number as a leader, and the difference in intelligence always shown, are points that Morgan presents in a striking manner, and especially in the case of the five puppies of the same litter.<sup>1</sup>

One hundred and twenty-six of the *individual* papers treat *Teaching among Children*. Ninety say directly or indirectly that teaching is confined almost exclusively to girls. The same is evident in the works already reviewed. This point not being mentioned in the syllabus, and the extent to which it is emphasized by teachers of experience, make it noticeable. The ages run somewhat near those given by Drs. Hall and Ellis for doll play, extending from 3 to 14, being greatest between 6 and 7.

<sup>1</sup> "Habit and Instinct," p. 155.

Forty-two cases are reported of children teaching before entering school; 48 cases of children preferring to teach other children; 33, dolls; 29, animals.

The motives given are, of course, merely the opinion of the observer. More than one was usually given. Desire for leadership, 33; superiority, 27; imitation, 19; necessity in play, 15; desire to instruct, 24; miscellaneous, 22. The psychologist can readily see how these motives, even if they be correct, shade into each other, and how only by a close analysis of childish impulses and of human action can we find the basal motive.

The 464 general returns give the following results: 269 say it is confined mostly to girls; 147 preferred to teach other children; 90, dolls; 114, animals. Motives: leadership, 98; superiority, 87; imitation, 131; necessity in play, 52; miscellaneous, 96.

A few condensed typical replies will be more suggestive than the statistical part.

(1) In the case of the boy it seemed imitation, but with the girl an instinctive love of teaching. (2) Several girls living near each other congregate for the purpose of playing school, and frequently continue all day. (3) Some children like to take the lead in anything, others have a natural tendency to teach. (4) A girl, now 8, before attending school tried to teach her pets and dolls everything, later tried to teach her cat and dog to read and write. Placing her dolls in a row she tells stories to them, and explains to them on her blackboard. She is inventive, and learns stories for this purpose. I attribute it to her being an only child. (5) Nearly every night I used to arrange books, which I imagined were pupils, on chairs. I then taught, explained, and answered questions to my heart's content. During vacation I played school all day, and alone; later fully decided to be a missionary, had many day dreams about it; now a teacher. (6) Do not recall any boys who ever had the least desire to play school or teach. (7) It is a child's greatest pleasure to play school and make dolls, dogs, etc., hear lessons. Girls usually choose dolls, boys dogs. At first children teach dolls or any objects, later they seek something that will respond and show results. Many desire to impart their improvements. (8) Love of leading and governing dominate children in their efforts to teach more than all else. (9) Almost every child, especially girls, begin to teach as soon as a doll is given them. (10) Children love to teach and help each other. The rapid spread of certain child knowledge is astonishing; many expressions become old before the teacher hears them; sometimes the lessons are of a domestic nature, again in regard to social duties. (11) Other children are always preferred as pupils, dolls and animals next. Have never known a group of boys to play school. (12) A—is only 3, yet the mother law is implanted in everything she does; teaches her doll everything that has impressed her. (13) The instinct is much stronger in girls, it seems to me, than in boys. Is it because women are the mothers and, to a large extent, the teachers of the race? Boys like to play school, but do not care to be teacher; if they choose to be teacher it is rather to exercise authority rather than to teach. Boys, more than girls, prefer to teach animals. (14) Seems to be imitation, have not noted it in children over 12; less among boys than among girls. (15) School playing was the chief amusement of my daughters; the elder played when an only

child and had not been to school. (This mother's youngest daughter writes me a long description of her doll school. Music [notes], penmanship, arithmetic, etc., are elaborately presented to a room full of paper dolls.) (16) (Woman, 19 years of experience). Earliest thought of an occupation was to be a teacher. No other ambition has ever displaced that. Learned my letters teaching them to my "school," as I called the younger children of the neighborhood. No one else was ever teacher. For three years and more I kept this school; and the little wood-shed class stands in my memory as one of the brightest spots of my childhood. When 9, was paid my first money for teaching.

One of the points most emphasized is the prominent place punishment has in playing school; elaborate and sometimes severe measures are adopted. Several cases are reported where children have employed various systems of punishment before they had ever been in school or had seen the slightest of it in the family. Believing that all possible opportunity for imitation was excluded, some have been insistent upon an explanation. Such cases may be due to clues caught from conversation, street observation, treatment of animals by older persons, and the like, or it may lie deeper in the childish impulses. Punishment certainly appears to be the dominant element in playing school.

The first thought that confronts the reader is that most of animal activities, teaching among children, and even doll play are simply imitation. Even if this be true, its great significance is not diminished. Many expressions that serve as a dumping ground, at first glance seem to simplify matters, but are really only the same old wine in new bottles. Does imitation point neither to the future nor to the past? Out of a multitude of actions why should some be especially chosen for imitation? Surely there is an instinct to imitate, which makes no special choice. But selective imitation is deeper and its limits not easily determined. Suppose a child two years old for the first time sees its mother with a new-born babe, whereupon it immediately makes for itself a doll which is cared for in like manner. May not this be simply a stimulus which calls forth an instinctive activity? Instincts that develop in response to a needed stimulus and the activity that is purely the product of the instinct to imitate, are not easy to separate in all cases. The elaboration of doll play, playing school, and the like, show unmistakable evidence of pure imitation, but the universality and dominance of such activities, the different interests manifested by the sexes, etc., may spring from a deeper and more fundamental impulse. "The impulse to play in special ways," says James, "is certainly instinctive."<sup>1</sup>

*Anthropological.* To return to the parental and more anthropological part of the subject, we note first Spencer's admi-

<sup>1</sup>"Principles of Psychology," Vol. II, p. 427.

rable section on the evolution of the teacher.<sup>1</sup> Among primitive peoples the priest became the teacher; partly on account of his having more time for imparting information and enforcing discipline, but a deeper reason is because all peoples believed in ghosts and gods who are influencing men's lives for good or evil, and information concerning the ways to secure their good will is knowledge of highest value.

In some tribes the medicine man instructs the children in the songs and traditions of the people, and in other cases has charge of all the boys for a while at puberty. In Abyssinia and Madagascar the teaching function is shared by the non-priestly class. In India the education consisted in learning the Vedas, and in the earliest periods such instruction was under the priests. Later, individual teachers established themselves and collected about them students from different parts of the country, and the boldest speculations proceeded from these seats of sanctity and learning in the forest. The normal genesis of the teacher was interfered with in Greece and Rome. In northern Europe the identity of priest and teacher, and their eventual separation, are seen in both pre-Christian and early Christian days. "This was true in England, but the secularization slowly went on in sundry ways." The endowment of schools by laymen, the introduction of non-religious subjects, increase of minor teaching institutions, and the like have been operative, but even now the differentiation is incomplete; and Mr. Spencer thinks that at present there is a struggle to reacquire that clerical control. "Primarily instruction, whether given to lay or clerical youth, concerned itself either directly, or indirectly with religious propitiation."

While this account doubtless gives us the main points in the evolution of the *special* teacher, it is drawing a line by giving teaching a special application. As Mr. Spencer observes, the youth gathered much that could properly be called knowledge which "served him for guidance in ordinary life;" but his instruction was not always confined to this. Much less did it denote the absence of any impulse to teach. Parents would most gladly have imparted this knowledge so essential had they possessed it. The priest possessed this needed information, and thus became their teacher in this special sense. In like manner did the philosopher become a teacher. So, certain classes to-day are sought as teachers possessing knowledge beyond the ordinary instruction.

Perhaps aside from the directly useful knowledge for guidance, the father and grandfather related to the children their past history and that of their ancestors, including the tradi-

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<sup>1</sup>"Principles of Sociology", Vol. III, pp. 274-285.

tions of the people. The mother performed her extra function as teacher by the use of songs and stories.<sup>1</sup> It has been said that the first empire was a woman and her children. "The story of civilization," says Zmigrodski, "is the story of the mother." We are told that in the early ages poetry owed much of its development and beauty to woman. "To the mother beside the cradle where lies her tender offspring, song is as natural as speech to man."<sup>2</sup> Ploss gives a world-wide collection of lullabies; and folk-poetry is full of tender melodies imagined and composed by mothers.<sup>3</sup> Dirges and funeral laments are in every land products of the mother heart.

Among the early Hindoos, Greeks, and Romans, the house-father was priest and judge of his own clan.<sup>4</sup> According to Max Müller, tracing religion back to the family, the father is *ipso facto* the priest. When families increased into clans and clans into tribes, the necessity of delegating certain duties to some heads of families arose.<sup>5</sup> Abundance of such evidence is found in Africa, Asia, and America. Even the priest as first teacher, of whom Mr. Spencer speaks, has everywhere been considered as a "father" in a large and specialized sense.

To the mother as teacher and instructor has been left in a great part the original instruction in agriculture, domestication of animals, spinning, weaving, housekeeping, social arts, religion, and language.<sup>6</sup> The function of the mother as priestess has been exercised age after age and among different peoples. "Scarcely has the infant mind begun to think," says Mason, "ere this perpetual priestess lights the fires of reverence and keeps them ever burning." When mothers have been excluded from public and secret ceremonies, the sacred observances have been kept up in her household.<sup>7</sup>

According to Mr. Riggs, among the Dakota Indians the grandfather and the grandmother are often the principal teachers. The boys learn the art of winning a livelihood, are told tales of war and past exploits, learn to sing love and war songs. In America the education of girls among savages has varied from that picked up by the mother's side to the extensive system of instruction in ancient Mexico where there were what might be called seminaries for girls. The woman has been par excellence the teacher of language, as indeed she is

<sup>1</sup> In anthropology I must trust largely to Dr. Chamberlain's valuable work on "The Child in Folk-Thought," and to what could be obtained from references given therein.

<sup>2</sup> Chamberlain: "The Child in Folk-Thought," p. 20.

<sup>3</sup> Ploss: "Das Kind in Brauch und Sitte der Völker."

<sup>4</sup> Combe: "The Village Community," p. 104.

<sup>5</sup> Max Müller: "Natural Religion," p. 183.

<sup>6</sup> Mason: "Woman's Share in Primitive Culture."

<sup>7</sup> Chamberlain: "The Child in Folk-Thought," p. 194.

to-day, if we omit the dry grammatical analysis. Geographical knowledge is generally embodied in songs in a kind of kindergarten pedagogy.<sup>1</sup>

Clark gives information of tribes having regular story-tellers who devote much time to learning the myths and stories of the people. Mothers often send for them to entertain the children.<sup>2</sup> Knortz tells of gifted men or story-tellers among the Chipeway Indians, who entertained many by their tales and legends. So, among many tribes, mythic legends, related by poets and others, produced much mental enjoyment, though accepted as mythical. It is the custom in some of the tribes of California for the men to dress like women, and "to devote themselves to the instruction of the young by the narration of legends and moral tales." Some have shut themselves up for a month with brief intermissions, spending the time in rehearsing the tribal history in songs to all who chose to listen. A similar practice is found among the Miwok Indians. The Pueblo Indian children receive all their education in morals and duties by means of fairy tales and stories told by old men in a sort of blank verse.

In India, Egypt, Greece and Rome, private tutoring and other forms of instruction were early developed. In India private teachers very early became powerful, and were held in high esteem. Even as early as 1000 B. C. there were special teachers not under the priesthood. Although instruction was principally in sacred things, nevertheless the chief characteristic of education among the Hebrew people was essentially domestic. It was a father's religious duty to instruct his children, especially in the nation's history and great events. Even to-day it is doubtful if any other parents devote so much time to domestic teaching. In the Talmud we find that they mistrusted teachers who were not at the same time heads of families.<sup>3</sup>

The education of the Middle Ages is supposed to have been exclusively in the hands of the church and directed by the monks. Leach considers this very questionable. He says: "The common belief and oft-repeated assertion that all the education in the Middle Ages was done by the monks is quite wrong."<sup>4</sup> The function of teacher and instruction of the young seem to have been shared by several classes, besides priest and parent, and quite independent of the profession, being taken up in many instances by artisans in connection with their occupations.

From the anthropological side Spencer's limitation of teach-

<sup>1</sup> Chamberlain: "The Child in Folk-Thought," pp. 198-204.

<sup>2</sup> Clark: "Indian Sign-Language," p. 109.

<sup>3</sup> Compayre: "History of Education," p. 9.

<sup>4</sup> Leach: "English Schools at the Reformation," p. 21.

ing is too narrow; and according to Leach and others, historically it is not the whole truth. To ignore the immense role played in teaching by father and mother, grandfather and grandmother, and all the teaching of folk-lore, myth and song, and to restrict teaching to the special knowledge imparted by the priest, viewing primitive life in comparison with present civilization, is as if all the present teaching for "guidance in ordinary life" was overlooked, and teaching as a profession limited to the specialist in several lines. It is to be regretted that we cannot trace out even down to our modern civilization this interesting but unwritten history of parental teaching. It has molded and still molds our civilization. We have a history of rules and formulas relating to what may well be called the accessory in education, but the history of the fundamental remains unwritten. Just how parents strike the fundamental springs of the emotions, temper and intellect, which fix life, is the basal problem for child study, and contains the secret of true teaching power. In the absence of any worthy history or observation on the parental teacher, we must seek light from the lives of the representative teachers of the world.

## II. HISTORICAL.

A careful biographical survey of the lives of the great teachers has been made with two objects in view. The first was to ascertain as near as possible the leading motive or motives that dominated their life and teaching; and secondly, the impossible task of finding in how far their methods and principles were original. All that seems evident on the last point is that depth of soul and earnestness of purpose gave to these minds a fertility all their own. It is impossible, also of minor consequence, to determine what is original and what is not.

On the point of motives to action the summary must be brief, only the fundamental points can be given, and the number reviewed must be limited. The motives prompting to action, the secret of their influence as leaders and teachers, and the fitness of their method to the human soul, are points to ever keep in mind. We can do no better than to begin with that neglected, but in many ways great teacher, Buddha. The idea that his life is fiction may be dismissed at once. Davids<sup>1</sup> says that it is not hard to separate the true, from the untrue. Little is known of his early life. After about ten years of married life his wife bore a son. Hearing of this, he said "this is a new and strong tie I will have to break;" and declaring that he would see his wife and son no more until he was able to be not only a father, but a teacher and savior, he departed to de-

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<sup>1</sup> Davids: "Buddhism; Life and Teachings of Guatama."



vote himself to philosophy and religion. This story belongs to the oldest forms of belief in Buddha. After seven years of study and self-denial he began his mission. He found his place "in the power over the human heart of inward culture and love to others." He taught all alike, high and low, rich and poor. Such powerful self-denial and self-control have always excited the admiration and wonder of weaker men. He was not simply a religious enthusiast as our writers on education who mention him at all, dismiss him. He was a true pedagogue. His large number of similes and parables, although not so striking as those of Jesus, show teaching ability and fertility of intellect. He was not only a teacher but an organizer. The chief difference between him and other teachers of his age lay in his deep earnestness and broad philanthropy.

One can hardly examine his classification of material properties, abstract ideas, corresponding to the six classes of sensations; his classification of the fifty-two tendencies or potentialities; his distinction of subjective and objective basis, without feeling that he was in no small degree a psychologist. Buddha broke the iron system of castes and became a teacher of his race. His self-surrender, his love and pity for humanity were the fountain springs of his life. These led him to go forth and teach all men, and for forty-five years he fulfilled this mission in the valley of the Ganges. He sent out his disciples who met yearly. His earnestness of purpose gave an impetus to his intellect which was fully comparable to his broad philanthropy. "As even at the risk of her own life a mother watches over her only child, so let us," said Buddha, "exert good will towards all beings."<sup>1</sup>

Confucius is another character whose brief mention as a pedagogue is not justifiable. Doubtless the foreignness and apparent strangeness of the supposed religion of these teachers somewhat account for this indifference to their contributions. Confucius's early love of learning and philosophic disposition are dwelt upon by old Chinese writers. At nineteen he married, but four years later divorced his wife in order that he might the more fully devote himself to his studies and public duties. During the three years he mourned for his mother, he devoted himself to the study of the philosophic basis of morals. "His system of education was superior to that of the Hebrews or any of the Western Nations at that time."<sup>2</sup> His works abound in pedagogical suggestions of the widest significance: on punishment, on the modern cry of individual difference, on "follow nature," "form without knowledge," "har-

<sup>1</sup>Swamy: "Metta Sulta," p. 39.

<sup>2</sup>Legge: "Chinese Classics."

monious development," etc. Let us glance at a few of the maxims taken from Dr. Legge's translation.

"If a man keeps cherishing his old knowledge, so as to be continually acquiring new, he may be a teacher of others." "Learning without thought is time lost, thought without learning is perilous." "Be true to the principles of our nature." (Follow nature.) "When the accomplishments and solid qualities are equally balanced, we have a man of complete virtue." (Harmonious development.) "Lead out any one." "What truly is within will be manifested without." "Learn to live before you talk about death." When we catch the full meaning of these phrases we cannot help but be astonished at how modern they sound; yet, so far as we know, they are all the product of a single mind, entirely devoted to the service of his people. He says of himself: "From the man bringing his bundle of dried fish for my teaching upwards I have never refused instruction to any one."<sup>1</sup> In his teaching he thoroughly recognized individual differences, and so adapted his instruction. His aim was to fit men for the conduct of this life. The extreme formalism into which education later fell must not be charged to Confucius. "We look and do not see, hear and do not understand," said he. His four aptitudes of potentiality for love, religion, society, and knowledge might well be applied to modern discussions of human instincts. The key-note of his life was love. Persecuted severely, yet he never lost sight of the word "Jin" or humanity.<sup>2</sup> The deep real nature of man is unselfish. Truth and love are over-wrapped by impure and selfish motives. "Truth is human nature and man is love." "Filial piety and fraternal submission—are they not the root of all benevolent action?" "Can there be loyalty that does not lead to the instruction of its object?" Such are the deep springs that moved the sympathetic and intellectual life of this truly great teacher and gave him power over men.

The life of Socrates is such that we can never think of him except as a teacher. Born in poverty he passed his life in contented poverty. He was self-sacrificing, yet independent in character. His originality in both subject and method, his power in piercing and stirring the germ of thought in others, are qualities rarely, if ever, equalled in any other human being. All the middle and latter part of his life was devoted exclusively to the self-imposed task of teaching. He not only excluded all other business, both public and private, but neglected all means of securing a fortune, and even the

<sup>1</sup> Legge: "Chinese Classics," p. 37.

<sup>2</sup> "History and Spirit of Chinese Ethics," *Inter. Jour. of Ethics*, Vol. VIII, pp. 86-100.

necessaries of life—without which he often lived without complaining. He was seen early and late in the market-place, questioning young and old, rich and poor. Never has there been another who devoted a long life to teaching so indiscriminately, receiving and asking nothing. His supernatural mission would not allow him to rest or employ himself any other way. Without such a feeling his conversation would doubtless have taken the common and ordinary turn. If he examined others, he also examined himself. Grote does not think that his philosophic nature ever prompted him to that systematic and even abstrusive cross-examination.

From his youth he was accustomed to obey a voice of warning or restraint from doing things, which some have called the genius of Socrates. He called it a divine sign, and obeyed it implicitly, still he never looked upon it as anything great, or as entitling him to particular distinction. It appeared on small as well as on great occasions. It never allowed him to enter public life.<sup>1</sup> His trial and death are among the most heroic things in history. Self-possession, self-sacrifice, sympathy for humanity, the extreme devotion to his life work, his fertility of mind, his power to pierce deep the souls of men, are objects of admiration, wonder and reverence. Once dreaming of a future life, he said he hoped to continue in the Elysian Fields interrogating the shades of the mighty dead.<sup>2</sup> Socrates's original method has preserved his name, and indeed, as usually set forth, that is all.

Whatever view the world may take of Jesus as an historic character, his power as a teacher and leader of men will forever be an object of admiration and of inspiration to the true teacher who seeks to influence and uplift the race. We should awake to the fact that education is not a question of merely how much can be *presented* to the mind, but rather how can suggestions and knowledge needful for life be made to take root in the human soul. No one can deny that the sayings and parables of Jesus would sink deep into the hearts of men even were there no traditional history.

Seeley, in his "Ecce Homo," declares that Jesus formed a single plan to the execution of which his whole life was devoted. This plan was to kindle an enthusiasm of humanity which remained in a dormant state, being crusted over by a false maxim that all men are devoted to selfishness. Commands had been negative, but Jesus made them positive. The kingdom he founded was a true brotherhood based on devotion and self-sacrifice. Humanity is the chief characteristic and

<sup>1</sup> Grote: "History of Greece."

<sup>2</sup> Compayre: "History of Pedagogy," p. 22.

single tie uniting and sustaining this everlasting state; and the inspiration is the life of the founder. In the temptation which Christ endured he forever put selfishness aside. His power in miracles made manifest that by his own resolution he had deliberately disarmed himself. It was his transcendent power and unspeakable condescension that drew all men unto him. In preference to philosophy he chose a "Living Example." For Seeley Enthusiasm of Humanity is Love for Race, for the ideal of man in each individual, for *the man* in every man. A man loves himself only in the ideal. Christ placed the love of *man as man* first in the list of virtues, and showed that a man must be drawn out of himself in order to be himself.

Matthew Arnold has given an excellent analysis of the power of Jesus as a teacher and leader.<sup>1</sup> The *method* of Jesus is best expressed by *self-renouncement*. "Whoever will come after me let him renounce himself." The *secret* is expressed by mildness or sweet reasonableness. "Learn of me for I am meek and lowly in heart." Self-examination, self-renunciation, and mildness were the great means which Jesus employed. The extreme simplicity of the matter requires only "the artless, unschooled perception of a child as the right organ for apprehending it."<sup>2</sup> More inwardness, more feeling was needed. It was necessary to plough up and quicken the feelings. To describe the work of Jesus by a short expression "which gives the clearest view of it, we shall describe it thus:—that he came to restore the intuition. He came, it is true, to *save* and to *give eternal life*, but the way in which he did this was by *restoring the intuition*."<sup>3</sup> He found Israel with no real hold upon anything. Self-renouncement and mildness make for man's happiness, yet there is a far deeper principle which keeps no consciousness of happiness as a ground of action.<sup>4</sup> Jesus did not tell his disciples to follow either his *method* or his *secret*, but "follow me." It was only by fixing their mind and heart on him that they learned to use the method and secret; and by "feeding on him," they grew in power and influence.

His teachings embody at least two of the greatest pedagogical principles. The first is the method of indirect suggestion by which an idea is made to cling to the soul. A thing is felt to burn within without the individual knowing it was in any wise intended to stir his soul. The second is the concreteness and apt selection of his illustrations. We find him dealing in generalities only at the proper time, and never mistaking the character of those to be instructed.

<sup>1</sup> "Literature and Dogma."

<sup>2</sup> *Ibid.*, p. 90.

<sup>3</sup> *Ibid.*, p. 172.

<sup>4</sup> *Ibid.*, p. 92.

Comenius's greatness was certainly due to his ardent and exalted humanity. Early left an orphan, he became a charge upon the community, but a man made heroic by life-long sorrow. The needs of the people filled his life with an overflowing zeal for the improvement of education. So comprehensive was his scheme that every house was to become a school. "Never was there a great man more modest," says Munroe. "Duty and not love of authority forced him to publication."<sup>1</sup> Although a wanderer on the face of the earth, yet he was the most influential teacher of the seventeenth century. After losing his books, manuscripts, wife and children, persecuted for six years, he wandered and concealed himself, still pursuing his course with singleness of purpose. "What the Lord has given me," says he, "I send forth for the common good." The care of children belongs properly to parents, but they need the help of the specialist. He advocated parental responsibility in education, universal education, co-education, and complete, rounded education.<sup>2</sup> With him the ideas of his predecessors were quickened by his universal philanthropic spirit. In his character we see that same self-renunciation, intense earnestness and devotion to service, which we everywhere meet as basal principles.

The life of Rousseau presents one of the most insoluble problems in history. In some respects it appears as if his life were composed of two personalities ever present. During the years of his great productions, Munroe aptly says that he rose into a kind of "divine ecstasy," yet his weaker nature often mastered him. "When he wrote his four great works it was not the usual Rousseau that spoke," says he, "but some far higher voice using him as an emotional mouth-piece."<sup>3</sup> Though he cannot be classed as a teacher proper, still he did an immense work for humanity. This motherless child, an embodiment of emotions, with defective training, an outcast, a mere tramp lodging in garrets at a sou, and complaining that bread was too dear, what might he not have been? Though he may not have always been sincere, though, for reasons not altogether clear, he cared not for his own children, though he taught not by word of mouth, yet who can doubt that in this complex being genuine love for children and humanity did not play the ruling part which moved France, and pointed out the path education and progress has in the main followed ever since, and which more than all others gives value to his works? When he exclaims: "Love childhood, encourage its sports,

<sup>1</sup> Munroe: "The Educational Ideal," p. 71.

<sup>2</sup> *Ibid.*, p. 80.

<sup>3</sup> "The Educational Ideal," p. 155.

its pleasures, its lovable instincts," and "O men, be humane! it is your highest duty; be humane to all conditions of men, to every age, to everything not alien to mankind,"<sup>1</sup> it is hard to believe that such does not spring from a soul much akin to the great souls already considered. If he borrowed from other writers, he was surely not without inspiration of his own. His great work is more a product of inspiration than of induction. Authors differ widely in their judgment of this strange and extraordinary genius, and psychology must make considerable advance in the study of human nature before harmony can be expected. He certainly possessed the power of piercing the hearts of men so as to make disciples. He filled a generation of men and women with a firm resolve that they would rather die than live in a world where civilization is only mockery.<sup>2</sup> If his life had any aim, the uppermost was that of *service* to future humanity.

Passing to ~~Pestalozzi~~ we find one about whom there is no dispute concerning the motive that dominated his life and was the secret of his success. That this power was the love of children, love for humanity, there can be no doubt. For sixty years the single purpose of his life was to relieve the wretchedness of his poor countrymen. His labors and sufferings are pathetic in the highest degree. His ardent self-sacrifice is so common to all that it need not be dwelt upon here, but the direction he gave it demands special attention. Parents are called upon to care for and sacrifice their lives for their children, and this he enforced by an example such as the world has rarely seen. He put into his work a soul willing to be despised, to suffer, even to die for poor and destitute children. If we get a glimpse of anything that might be called a teaching instinct we must never lose sight of the fertility of intellect that accompanied this single, self-sacrificing aim of life. He uttered sounds, knowing not why, had his children imitate, but neither he nor they understood the nature of his teaching. It was the result of a simple psychological idea revealed to his inner consciousness, but which he was far from understanding. He sounded the very key-note in education when he fell back upon *love* and *sympathy*. Munroe says this is the Pestalozzian "system." To kindle this one essential thing in human life—love, he presented his life a sacrifice to the orphaned and out-cast. He once said that for thirty years he had wanted the necessities of life.<sup>3</sup> If his system ran to seed in formalism, and has been disfigured by imitators, the inner essence to make fatherhood and motherhood the active center in education is a

<sup>1</sup> Payne: "Science of Education," p. 235.

<sup>2</sup> Morley: "Rousseau," Vol. I, p. 7.

<sup>3</sup> "The Educational Ideal," p. 183.

vital principle—now the best aim and probable result of child study. *Leonard and Gertrude* teaches us that “true training of childhood radiates from motherhood, and should find its center, no matter how widely it may be extended, in parental responsibility.”<sup>1</sup> He considered parental love the only sure foundation of education, and for him maternal love is the greatest power in education. The mother only needs a “thinking love.”

Krüsi, his assistant, says: “He possessed something infinitely beyond that which any course of instruction, no matter how good, can give. He understood what is hidden from most teachers—the human mind, the human heart, and the means of quickening and ennobling it.”<sup>2</sup> He went ahead without knowing whither save with a steady ethical aim. “His extraordinary teaching instinct,” says Compayre, “was never satisfied.” For forty years he read but little, and unfortunately intentionally remained ignorant of education outside of his own system. The element of power in this man is nearness through sympathy.

Froebel's intense love of children was accompanied by a pedagogical and maternal intuition perhaps penetrating deeper into the soul of the child than any other human being has ever seen. He saw that the impulse to foster life is the very core of human existence, that when once conceived it quickens every activity of life, and gives unity to feeling, thought and action; that to obey this impulse is the secret of true life; that from its violation arise sham, hollow form, and the various miseries of man. “What,” he asks of the mother, “means the fervent glow which both warms and illuminates your soul as you sit gazing upon the dear child lying so peacefully in your arms?” “What clothes with dignity and grace every simple service?” With a deep teaching instinct he was well able to answer. “If not with the intellect, yet with the premonition of the heart,” she surveys the child's life in its unity; and instinctively anticipates the seeds she sows. The mother instinct does not stop with satisfying and developing bodily conditions, but it looks towards a stirring of the impulse of the child's soul. The child must feel the love which inspires all you do. The greatest joy of a woman's life is to feel herself one with her child.

One of the most important movements made in education was instituted by a somewhat strange character—Basedow. The sternness of his father drove him from home. Attaching himself to a stranger, it was soon discovered that he was a child

<sup>1</sup> *Ibid.*, p. 182.

<sup>2</sup> Compayre: “*Histoire de la Pédagogie*,” p. 371.

of unusual ability. At school he was found tutoring other boys, and after his university course he became tutor in a family where his pedagogical instinct manifested itself in devising methods of teaching. Later he was found successfully begging money from kings and princes for the publication of his works.<sup>1</sup> The founding of his Philanthropin marks an important step; he declared his aim to be to form men whose lives should be consecrated to public good. This great enterprise attracted much attention; even Kaut became enthusiastic over it. Although it failed in the end, its influence radiated and still lives. Basedow surely had love for children and devotion to humanity. "He never went to bed," said Goethe, "but dictated without cessation. Occasionally he cast himself on the couch and slumbered." His last words were: "I wish my body to be dissected for the good of my fellow creatures."<sup>2</sup>

Fellenburg, once a laborer with Pestalozzi, a man who might have ranked high in the political world, gave forty-five years of his life to the cause of education. Into his school he put all of his immense fortune, and children of all ages and ranks were received. His wife and nine children assisted him. His life, his property, his family, all were given to the benefit of humanity. At first ridiculed, later he attracted the attention of all countries; princes and others visited him, returned and founded similar institutions.<sup>3</sup> He was endowed with great pedagogical insight.

Lancaster, who took up the philanthropic movement inaugurated by Bell, first instructed a few poor children under his father's roof, charging nothing, but accepting small fees where parents were willing to pay. Soon one thousand children were assembled at Borough Roads. Although his scheme finally fell into disrepute, and his methods are open to criticism, he possessed originality, added some good things, and above all had the power of inspiring young teachers with a fondness for their work.

Francke, the real founder of a wonderful series of educational and benevolent institutions in Germany, first opened a school for poor children in his own house. Later the school enlarged and gifts came in from many quarters; the few orphan children were provided for by Francke himself. At his death his schools included over 2,200 pupils. He became the forerunner of the Teachers' Seminaries.<sup>4</sup>

We must not pass in silence "England's greatest Schoolmaster," Thomas Arnold. Although fitted for the church, he

<sup>1</sup> Williams: "History of Modern Education," p. 289.

<sup>2</sup> Quick: "Essays on Educational Reformers," p. 162.

<sup>3</sup> Century Encyclopedia.

<sup>4</sup> Williams: "History of Modern Education," pp. 233-235.



liked teaching better. He says he was always fond of the society of the young, always anxious to be with his pupils. His power was found in the intense earnestness he gave to life. "It was not his genius, or learning, or eloquence which stirred within them; it was his sympathetic thrill caught from a spirit that was earnestly at work in the world."<sup>1</sup> Few men have ever possessed such clear conception of life as service. Work he considered the appointed calling of man for which his powers were given, and the condition under which his nature is ordained to develop. He advised a friend entering teaching to enter it heartily as his life work, then he would not always be in danger of grudging every hour given to it. Conscious of the greatness of his work, for fourteen years he felt and cared for the children at Rugby as only a mother could for her children. The power that emanated from this institution was clearly felt by the whole nation. For acuteness of intellect without genuine goodness of heart he had little admiration. He was quick to discover any special gift in pupils or teachers, and gave opportunity for the improvement of the same. His power lay not in methods, but in the man, in his intense devotion to a life of service in the interest of coming generations.

The life of Mark Hopkins, one of America's greatest teachers, reveals to us a soul operating under a strong impulse for higher life. Before entering college he taught in Richmond, where he displayed the same power in instructing and attaching pupils to him that later distinguished him as a venerable teacher and college president; and, at this early date, his power rested on the same impulse to despise meanness and pursue lofty ideals. From a paper addressed to Tutor Hopkins, signed by the Junior class, we learn how highly his first year of service in college was appreciated. All who mention him as a Sunday school teacher represent him as almost ideal. Everywhere he demonstrated his ability to awaken interest and kindle intellectual life.

Mr. Canning, one of his pupils, says that no opinion of his army of pupils, oral or written, can adequately portray the actual man, the living instructor, in his recitation room. So apt in illustration, so tactful in reading his pupils, so original and independent, he awakened interest in the sluggish, and attention in the thoughtless—he made men think. In government his influence was eminently one of affection rather than authority.<sup>2</sup> His intense interest in young men, his lofty ideas of character and true worth, his marvellous influence over

<sup>1</sup> Bolton, Sarah K: "Famous Leaders among Men."

<sup>2</sup> Carter: "Mark Hopkins," pp. 32-35.

students, and his ardent desire to help some one, are qualities that place him as a schoolmaster beside Arnold, and again these stand before us as *the* elements in a great teacher.

It would be interesting to take into account Sturm, whose success multiplied until his schools reached the thousands; Trotzendorf, who so earnestly devoted himself to his duties as to never marry; Madame de St. Cyran, whose love and attitude towards children has few equals, and from whom sprang the education of the Jansenists; Madame Necker, who clearly saw that genuine sympathy is what quickens the mind of both teacher and child; Madame Guizot, who saw that none of the theories and methods are equal the force of the gentle mother-care, that education cannot attain its highest development without parental teachers; Mr. Mann, whose contributions to education are inseparable from his self-sacrificing life devoted to the good of humanity, and who, abandoning the high positions of state, became an inspiring teacher in the wilderness. Many other teachers and great missionaries impress the same truths, and deserve a like consideration.

After a careful examination of the life and works of all those entitled to any noteworthy position as teachers, promoters, and originators in education, save a few mixed characters and exceptions, it may be said with some degree of certainty that the main source of activity and secret of success have been the idea of service to the race. This burning desire has fertilized and quickened the mind of both teachers and those coming in contact with them. The animating influence of altruism, the part that feeling plays in the originality of the intellect, the fuller meaning of the idea of service to the race—are questions of fundamental importance to which we must return later.

Philosophers have not been content to philosophize only. Not only is it impossible to draw any sharp line between philosophy and education, but also between the philosopher and the educator, between teaching and philosophizing. On examining the world of philosophers we find that nearly all of them have been teachers even in a specific sense. In many cases, especially among the Hindoos and early Greeks, it was considered disgraceful to ask pay for teaching. Perhaps many theories and much teaching originated solely from a spirit of rivalry or personal ambition which had little regard for true progress in comparison with selfish ends; but no one could think of calling this the dominant motive in philosophy.

Taken in a general sense it appears that anything like a complete human life includes three periods. At first there is a spontaneous unfolding of the more general impulses and instincts. Later, in most souls there is awakened by comparison either with the great historic souls, or with an ideal, a sense of

incompleteness, either instinctively or otherwise implanted. This genuine sense of soul incompleteness must be distinguished from that society paint which weak souls and education so often assume as genuine development of individual personality. In coming in contact with such the artificial self is seen in every look, act, and thought. This genuine sense of incompleteness may or may not lead to a harmony with and sanction of existing principles of society, but such is not a dominant motive in consciousness. A soul under this intense sense of incompleteness cannot remain inactive without seeking annihilation, as is seen in many cases of suicide. When accompanied by a desire to render service, which, if not always present, is the chief motive power, the soul can in nowise feel its completeness without endeavoring to lift others. Hence the voluntary effort to make disciples among philosophers and teaching among Christian peoples. The individual unfolds, supplements and sacrifices his life to the race. In the returns there is a general agreement that knowledge means nothing to them unless they can share it with others.

### III. TEACHING INSTINCT AS VIEWED BY TEACHERS.

*Consideration of Returns.* Topic II on *Leadership, desire to learn, to teach, etc.*, and Topic III on *Concealment or Limitation of Knowledge* were answered by 105 individual teachers of experience. Some points of interest may be culled from these somewhat voluminous replies. Fifty-one say they have had a passion from childhood to teach; 4 never wanted to teach and still do not; in 17 the desire originated about 23; with 24, after being forced to teach, their love for children and passion to teach grew rapidly. Aside from personal interest, 22 think there is an instinct to conceal a good thing, while 64 think the impulse is always to communicate.

In the general returns 45 have had a passion from childhood to teach; 8 have been driven to it by circumstances; with 28 the desire originated early in life, under a variety of stimuli; with 37 the love for children and passion to teach was awakened after entering the normal school or the profession; 43 have never taught and never want to.

A few condensed quotations from the *individual* returns may be of interest:

(1) The true leader must be distinguished from the "bossy individual." (2) D. and F. always loved and demanded leadership. (3) Had never intended to teach, became anxious to teach after substituting a month. (4) (Teacher, 22 years of experience.) Always wanted to be a teacher, thought it noble to tell young people how to do things. (5) When ten, caught sight of a kindergarten in Nebraska; it left a lasting impression, and as I grew up my sole desire was to teach. (6) Have always wanted to teach, never felt more genuine

pleasure than when teaching my first school. (7) At 12 I made up my mind to be a teacher, do not know what influenced me. (8) My desire to teach originated in the high school and grew stronger in college. Seeing the good that some have accomplished inspired me. (9) From a child I had a strong desire to teach, kept that in mind in all my study. (10) Wanted to be a missionary, took up teaching to earn money for that purpose, but liked it so well have remained. (11) Was forced to teach, always hated the school room, but forget this completely when in the presence of children. (12) (Male.) While in the high school decided that I should never teach, later began the work and became enthusiastic. (13) Was compelled to hear my sisters recite three months, became interested, and of my own will decided to teach. (14) Am compelled to teach for a living, never liked it, yet think I have succeeded. (15) A., B. and C. always wished to be teachers; D. was indifferent; E. did not care for public life. Yet all are bright progressive teachers. (16) (Female, 19 years of experience.) Earliest thought of an occupation was to be a teacher. No other ambition has ever displaced that. Learned my letters teaching them. When nine, I was paid my first money for teaching. (17) There is an instinct to show or display knowledge under conditions to excite envy or admiration in others.

The discussion of what should not be taught will form good material for special treatment in another article. It is rather strange that teachers do not seem to conceive that there is a pedagogical instinct which leads to a concealment of knowledge as a means of protection against the pollution of the mind by corrupt and foreign ideas. In the animal world this instinct takes in the main the form of physical protection against injuries; in man it is fully as strong, but directed mainly to the protection of mind and soul. Life has suffered from certain ideas as well as from an unfit environment. In man, at least, there are internal as well as external enemies, and to protect offspring against these internal foes is no small part of the pedagogic instinct.

On points bearing directly on *Teaching Instinct* and *Incentives to Teach*, the 171 *individual* returns, coming from teachers, principals, and superintendents, whose experience ranges from 4 to 29 years, will be considered first. Believe in a Teaching Instinct, males, 54; females, 102; sex not designated, 12. Best mark of such answered by 123, usually in such terms as sympathy, love for children, desire to help mankind, love for the work, magnetism and power to inspire; self-control, will power and sympathy; patience, kindness and tact; power to interest and to impart; intense earnestness; power and presentation; love for humanity. Sympathy, love for the work, for children, for humanity, are the most frequent expressions.

*Best Marks of Teaching Instinct.* (1) Firmness of will. Strong love of games. Sensitiveness to the absurd and ridiculous. Great good-nature. (2) Their ability to hold the sympathy of their pupils, to master the subject in hand, and to make it interesting. (3) Strong personality, marked individuality, tact, and a loving unselfish spirit.

(4) Common sense, simplicity, personal magnetism, benevolence—presupposing broad and deep culture, and a rigid analysis and mastery of the subject to be taught. (5) Teaching from a *love of the work*, ability to *sustain enthusiasm* for the work after years of confinement to it. (6) Kind, loving disposition, very sympathetic, power to discipline. (7) Power to interest; skill in explaining; an understanding of children; sympathy. (8) Sympathetic co-operation from pupils. (9) Sympathy, patience, kindness with firmness, wise in decision, inexplicable power to govern and inspire. (10) Talent for presenting knowledge, tact, pleasing in manner, love for children, and strong will. (11) Sympathy, firmness, enthusiasm—all born of genuine love for the work and those taught. (12) Such persons have patience, perseverance, love for children, goodness of heart. (13) He must understand human nature, have a love for children and a desire to work with them. (14) Tact, energy, interest; love and sympathy for the young. (15) Best marks of such teachers are love for children and understanding of human nature, a desire to help. (16) They are full of animation, understand human nature, love the work. (17) Such persons have the ability to see the needs of other minds, and are possessed by a strong desire to be useful.

Replies are more confused and less definite on this topic than almost any other part, but this is in harmony with the results obtained by personal inquiry. It is a rather well-grounded belief without a definite conviction of the grounds on which it rests. The purely acquired qualities are not separated in many cases; but in general such are named last in the returns. But these results should not be so surprising to one who has ever noted the great difference in the power of teachers and then attempted to formulate the ground of difference. The analysis is difficult, and little thought has been devoted to such an important study.

*Can it be improved?* Yes, 126; no, 8. *How far can normal training take its place?* Answered by 86, almost unanimous in saying that nothing can take its place, but normal training, *if of the right kind*, will help nourish it and develop it to various degrees. Eight think normal training no good whatever.

One hundred and fourteen say that *such teachers are influenced by books, lectures, etc.*; 106, that *they devise their own methods* nevertheless.

Twenty-eight think that *books, programmes, school regulations and the like* need not, and do not, unless very extreme, operate against the teaching instinct; 46 think that such generally does.

(1) In many cases hindered from doing their best by being compelled to stay within the limit of the text. Some programmes hold teachers responsible for the work between certain pages of text; this often does not permit of outside work and originality on the part of the teacher. (2) These things operate against the teaching instinct only when adhered to slavishly. (3) Books should not; the other things might if forced to lay aside her own methods for those of another person. (4) Appliances and administration, if good, should not operate against the development of the teaching instinct, but should

promote it. Mechanism may easily hinder free and intelligent action of the teacher. (5) These operate against the free development of the teaching instinct if made to subserve teaching—they might in some cases prevent dissipation of energies. (6) Yes, if followed too closely. I would hold teachers responsible for securing certain *results*, leaving the methods largely in their hands, but always reserving the veto power. (7) Books, etc., hinder by giving no time for original work. (8) Yes, produces mechanism. (9) Yes, in many cases by allowing the teacher very little freedom of individual thought. (10) Restricts teacher to more or less routine. (11) Always, if taken as absolute authority rather than as suggestive. The teacher is much more important than the system.

There is an almost unanimous agreement that there is a deep element in the best teacher never implanted by training or knowledge, yet such is capable of development to a higher degree of perfection. The papers also indicate that the less intense this "natural aptness" the more is training necessary. It is safe to say, however, that in these individual returns there is no small degree of dissatisfaction with the training now generally given. It must be of the *right kind*. One superintendent reported that a teacher of his, after attending one of the noted normal schools, became a slave to methods, and mechanized everything, but had no success, until later, when she began "to rip up her methods to suit the conditions." The treadmill system of teaching according to fixed rules and regulations, and the presentation under precise methods have doubtless crushed the life out of many a good teacher, but on the other hand we may well ask: Are there teachers enough who have aptitude sufficient to maintain their individuality and to adapt methods to their needs to supply the demand? and if there are not, is mechanized instruction better than none?

*Why teach the young?* was answered by 72. The following are some of the reasons given:

To make better citizens, to help to better living, to transmit good, love children, the young will be mature, make the world better, live to some purpose by influencing others to all that is highest and best, partly from love of the work and partly for a livelihood, for humanity's sake, affords opportunity for growth and development of self that nothing else can give, aid to complete living, avert misery from the human race.

*Do you consider the work more arduous than other callings giving equal pay?* Yes, 66; no, 64. *If so, compensations.* Answered by 64. The compensations mentioned are:

Children's love, self-development, consciousness of duty performed and having helped others, seeing the child's improvement, helping to a better understanding of humanity, gratitude from students, raising the moral and intellectual conditions of life, the work is congenial, am happy in it, fields of research always at hand, honorable calling, contact with young minds, consciousness of benefiting the young, consciousness of work done to the best of one's ability.

The last question, when closely analyzed, has a great significance to every teacher. The satisfaction of seeing a child grow and develop, the general impulse to bring things to maturity, dominates in the replies. Teachers show a clearer glimpse of this truth than almost any other in the returns. In the personal investigation one gentleman remarked that those who did not teach solely for the money, taught simply because they found more pleasure in it. But why should they find more pleasure in it when the energy expended is so great? Simply because they are obeying a normal impulse. The child finds little or no pleasure in work even of small expenditure of energy, but he does find pleasure in play even to the point of fatigue. Why teach the young? rests upon a deep biological principle to be taken up later.

Ninety-six answered the question: *What inspires you to improve?* The replies may be summed up in such expressions as the following:

Love for the work, the need of better teaching, self-ambition, sense of duty, desire to help education, wish to do good, cannot tell what—must be the underlying law of improvement, want to teach in the next world, the trust of little children, to get more money for my family, that the next generation may be wiser and better, to reach an ideal life.

There is no great variety in the 90 responses received in answer to the question: *How do you keep up enthusiasm teaching the same thing?*

(1) You are not concerned with your subject, you are developing another mind not your own—that is always new and interesting. (2) By keeping up my research on the subject. (3) By presenting the subject each time in a new light, and by turning my attention *more and more* to the pupil. Each time attempting to cultivate my power of looking him *through and through* and helping him at the weakest point. (4) Three things help to keep up enthusiasm: Teacher knows the subject better every time; teaches a new class of pupils; and, if a progressive teacher, teaches it better every time. (5) Constantly wider reading and study; present new phases. (6) Never teach the same subject twice alike. Nature of class determines the method—no two classes alike. (7) By keeping up with the development of my subject. (8) Keep up interest by keeping abreast of the times—subject changes—different minds to deal with. (9) Variety in method of presentation.

The last two questions were fully answered by the teachers of St. Louis,<sup>1</sup> and with similar results, although they bring into more prominence the idea of interest in life, development, and human nature. The best teachers are pushed on by an internal desire to improve, but with an eye ever fixed on the use that may be made of the improvement. This feeling of incompleteness and desire to further the race by a more com-

<sup>1</sup> Questions issued by Supt. Sheldon; results still in manuscript.

petent life is again revealed in the 94 ideal teachers described in the returns.

Prof. Luckey has been kind enough to furnish me with a set of 52 papers that deserve special mention. He writes that they come from an entirely new class. The following questions were presented at a single recitation without any explanation or any opportunity for consultation on the part of students. So there is every evidence that the contents of each paper is the writer's own. Are teachers born or made? What is your evidence? What can normal schools do?

Of this number 13 are males, 39 females, but only in the difference of putting the matter, would one detect a difference in the papers. Forty-five believe that the genuine teacher is endowed with a something (variously expressed) which no training can engender; five believe that the good teacher is simply the result of good training and circumstances. Thirty believe that normal training can do much to mature and develop the teaching instinct, and that many times it is never awakened until under some inspiring influence. The whole tone of the papers is to the effect that normal training as now administered cannot insure teaching power to all no matter how arduously they may labor to take in the course. What has been the previous training of these teachers I do not know. Some have taught 6, 10, and even 13 years. The qualities they designate as marks of the born teacher are difficult to classify in their own language.

Selecting the leading thought and using, when possible, the words of the writer, the chief qualities mentioned are as follows: Sympathy, 9; natural ability to understand children, 8; devotion to the child, 7; love for the work, 5; love for humanity, 3; inspire obedience, 2; magnetism, 2; power to express, 4; power of personality, 4; feel at home in the work, 1; reverence for all nature, especially the child, 1; intuitively understand the child, 1; nearness to children, soul to soul, 1. It is evident that many of these mean the same thing in substance, and the general similarity is quite marked. The following are condensed citations:

Usually not made, many have worth and character, yet cannot teach. Sympathy, the necessary element, cannot be acquired by training or study. Appears in early childhood, and if developed from the first we would have better teachers. The highest blooded animals need the most careful training. Something gives them insight into their work and they give pupils something that others cannot. It does not imply that the knowledge how to teach is inherited. Born with natural instincts and feelings that make a true teacher. May be trained, but cannot be made. Come into soul to soul contact with pupils, and exert an influence that "made teachers" cannot. Sympathy and love for humanity cannot be hammered into any one. Love



for children which freely unfolds itself. Must get into child life. No success where revenue is the sole end, such lose the power to inspire and to quicken the mind. Sensitive to the needs and feelings of others; if this feeling is strong, the remedies will be suggested the same as the instinct to self-preservation will suggest means of saving self. My best teachers have not been those who knew most, but those who loved most; they unconsciously imparted a power that cannot well be described. The born teacher possesses (often unconsciously) an almost extra sense (nearer sympathy than anything else) which makes her feel the need and see the want in the child's mind, and this enlarges itself into the power to adapt knowledge to his need; she feels an indefinable connection between their nature. Teachers are made, perhaps, by influences that began early in life. Teaching power due mostly to early environment.

In how far either the preceding *individual* returns or these papers express the general opinion, one is unable to say with statistical certainty. We may suppose that in the main those most predisposed to such belief were most likely to reply, and likely to reflect their own life. It would be impossible to crowd self entirely out of such a matter. Many, however, in describing a teacher having the teaching instinct exclude themselves. While the ideal teachers described may be somewhat colored by personal achievements, yet they must essentially reflect the individual's ambitions, longing or *sense of incompleteness*.

One more attempt, that of visiting as many schools as possible from kindergartens up, was made to approach this problem both on the generality of this belief, and on the practical phase of the subject. Many teachers have been kind enough to give a brief statement of their opinion. While holding fast to the great value of the various training schools, they generally confess great individual differences and are ready to point out a "natural teacher." One of the best kindergarten teachers said, that, after forty years of experience, she was convinced that the teaching instinct existed, that she could separate her girls with some degree of accuracy, even before any experience on their part, that in women the teaching impulse waned in the teens but often returned by 25, especially if without children of their own; that the great work of training was to nourish and awaken this impulse, the latter sometimes requiring not training but a special circumstance; that the best girls she trained took a greater delight, and succeeded better, in teaching the children of the slums than those of the wealthier classes, and often willfully left such work and sought the slums.

A superintendent of nine years' experience replied: "You do not mean to question that teachers are born, not made? The best teachers ever under me were three poor country girls who had not the slightest training and only a common educa-

tion. Training may help such and develop a certain degree of teaching power in any one; but in the genuine teacher there is something deeper." Teachers are much freer to express a belief in the existence of this special quality than to say in what it consists. Mr. Walton, former agent of the Massachusetts Board, says it consists in a power manifested chiefly in self control, goodness that divests of all selfishness, and true devotion to service. Prof. Luckey, in his communication concerning the papers above examined, says that he feels that there is a kind of vague feeling among most people that teachers are "born" not "made," but when they come to analyze the matter they reach a different conclusion. He concludes that it means nothing more than *interest* and *application*.

*Discussion of Motive.* What is the foundation of this *interest* and *application*? is the fundamental problem. With the foundation of this interest and application varies the power and efficiency of the teacher. The function of the intellect is rather to seek *means* to satisfy an instinctive need than to create *ends*. The more limited the range of intellectual activity the simpler and fewer are the means of satisfying the instinct; and likewise can the end of action be more readily detected. In human life the means devised absorb attention to the neglect of the impulse that prompts. Evidence is not lacking that it often, at least, requires a kind of instinct to see behind such varied manifestations. A kindergarten teacher may affect all the qualities of a mother so as to deceive the looker on, but even though beautiful and attractive in appearance the child will soon desert such an one for the more genuine mother.

On what does this immensely wide and intensive activity of teaching rest? Is there a teaching instinct? What is the ultimate source of power in the true teacher? Are we satisfied to answer these questions by sympathy, devotion to children, desire to impart knowledge, love of power, interest in work, power of self control, love of all nature, magnetism, power to command obedience, and the like? Are these ultimate? Have they not a common root? We cannot think of speaking of a teaching instinct in the sense in which we would speak of the instinct to build nests in a certain way, but rather as we would think of the nest building instinct in general. It appears that in this more general sense the genuine teaching power may be traced to a fundamental instinct.

One cannot help but be impressed with the fact that the dominant thing in the care for young among animals, in the tender teaching of the earliest mothers, in the souls of great teachers, and in the papers that we have examined, can be expressed by self-sacrifice, or altruism, which term will be used as being more comprehensive, including not only conscious

surrender of self, but the unconscious as well. That this is a well defined instinct is now generally admitted. To say that altruism and egoism are one and the same thing is simply to introduce philosophic chaos into two well defined lines of thought. To say that the animal or mother that destroys her young to avoid the care, and the one that lays down her life for her young, are both pursuing their selfish ends is to do violence to psychological thought. Even though we say that each is so *constituted* as to reap the highest self-gratification, the immense difference in activity still remains to be distinguished and considered. Why do these opposite activities disgust or inspire mankind? Do the self-sacrificing have any consciousness of seeking their own pleasure? Is it not incidental rather than the end? One of the deepest psychological and pedagogical phenomenon in life is the fact that the normal human being cannot see, hear, or read of selfishness, cruelty, and the like without shrinking from it; and that self-renouncement, devotion, true service, attracts, inspires, and broadens human life.

To avoid pain and get pleasure is quite fundamental; but pleasure has its limits. Even the most refined forms of the doctrine do not meet human experience. It may be doubted if any soul can look back upon a life aimed at pleasure as the ultimate end with any degree of satisfaction. Indeed volumes of confessions to the effect that fame, honor, wealth, ease, and the like sought and obtained as ends in themselves, show that these do not satisfy the human soul. All these things are seen to have their limit; even the youth asks if there is not something higher. To love all that is, is the adolescent's reflection in solitude. A short time ago a girl of twenty-two, whose family has a wide historic fame, and whose father had done everything that he considered could be done to insure an easy and free life to his daughter, approached a prominent teacher asking in agony what she should do with the remainder of her life. The easy life is not the normal life. Carlyle said that only when the claim of wages is zero can life, properly speaking, be said to begin. The soul is infinitely larger than consciousness, and the individual represents the race. We have within us the germs of a life infinitely larger than we can live out, and nothing is more evident than that introspection must remain a very limited means of determining the end of action.

The rudimentary forms of teaching among races, whether by parent or priest, was in the main voluntary service. Certainly the large body of men and priests that have abandoned family duties and ties to devote themselves to the interest of child life exemplify this. Certainly the dominating motive and the secret of power among all great teachers and philosophers have been their intense devotion to service. When we say that

teaching power consists in ability to go out of one's self and become "as a little child," what does it mean but that it is that maternal gift by which nature has enabled a mother to best develop her young in the interest of the race and of evolution? What is sympathy, which is nearly always first mentioned as evidence of teaching power, but a voice which awakens, or rather is awakened by, this principle? We do not sympathize with those who need no service. Indeed the best teachers seek those who need most. Again, where is that element called patience more completely exhibited than in a mother's care for her offspring? Love and devotion to children, love of all nature, forgetfulness of self, and the many kindred expressions are but promptings that call forth the needed service.

Power to command obedience is in many cases confused with mere police force and, when used in such a sense, should not be joined with the teaching instinct. The psychological aspects of self-control are somewhat complicated. It has been said that self-control is the result of opening up new channels for energy. But these newly opened channels flow from, not into, self. The adolescent energy that does not find its outlet in some form of altruism results in moral degeneration. Dr. Hall has said: "Selfishness is arrested adolescence." The young mother often astonishes both herself and others by her sudden acquisition of self-control that comes with her new born babe. Again, the self-control which is usually in mind as a potent element in teaching means nothing more than patience.

To consider teaching as a business in a business sense is not the light in which this subject has been viewed, yet for the sake of clearness this point cannot be entirely avoided, but it must be borne in mind that this is greatly to limit the idea of teaching. It is supposed that a vast majority teach for the money. The facts are most teach from a variety of motives, some of which are more evident than others. Even to teach for money has more than one meaning. It may be purely selfish, even miserly; it may be as a matter of service to immediate family; it may be for the purpose of further self-development in order to render higher service; or it may look toward the establishing of some philanthropic institution. The class teaching merely for a livelihood is increasingly large, but many are primarily devoted to the good of the immediate children, while compensation follows as a secondary consideration. After all allowances are made for those who teach solely for these lower considerations of extra leisure, "easy" work, suggestions from others, financial necessity, etc., there is and always has been a class of individuals governed by more fundamental demands of humanity.

Teaching, neither in its broader nor its narrower conception,

can be founded wholly on the same motives as other callings. There is absolutely no other form of activity which appeals so much to this fundamental and biological function of life as instruction of children, especially the younger. College teaching, and particularly supervising, has become more of an isolated business. The brick layer and stone cutter are in nowise concerned with the effect their activity will have on the material as an end in itself, but how different with the teacher! It is only the one whose parental instincts have been perverted that can totally disregard the effect of her teaching upon the inner life of a tiny child, and coolly look upon her work from the standpoint of personal success. Some say that they entered teaching from financial necessity, but are quite sure that they were soon dominated by higher motives.

#### IV. BIOLOGICAL.

Among animals low down in the organic series there often occurs a close association between mother and offspring. "Affection," says Ribot, "is met with very low in the animal series, at least in the form of maternal love."<sup>1</sup> "While the individual is young, its welfare and the welfare of the race go together," says Spencer. The instinct of reproduction differentiates, at least in birds and mammals, into the sexual instinct and the family instinct which later in turn is differentiated into a maternal instinct highly consolidated and complex, and a filial instinct.<sup>2</sup> Animals exhibit sympathy not only for individuals of the same species, but sometimes for members of different species; sometimes love intensely, even unto death. When accompanied by the males some species often actually *nest* in common with a view of sharing the common burden of rearing their offspring. The gannet, cormorant, swift, chimney-swallow and rook are examples. Dr. Topinard says even at times different species associate thus together.

Audubon has described the gannet as they live at the mouth of the St. Lawrence. Arriving in flocks of fifteen to one hundred, they construct their nests two feet apart in parallel rows. The males hunt food and even sit occasionally. When the young are able to move about the divisions are trampled down and all become one large nest. After four months of tending the young in common all is finished.<sup>3</sup> Levaillant observed 320 nests of the weaver bird on the same tree; the nests touched each other and were all covered by a sort of umbrella-like tent fastened to the branches; they combine for nest-building and

<sup>1</sup> Ribot: "Psychology of the Emotions," p. 14.

<sup>2</sup> Topinard: "Science and Faith," *Monist*, Vol. VII, p. 505.

<sup>3</sup> Topinard: "Science and Faith," *Monist*, Vol. VII, p. 228.

rearing of young.<sup>1</sup> Generally speaking the species endowed with the highest family qualities are the most sociable. The duration of family life is generally fixed by the ability of the young to care for themselves.

As a rule among animals the care and teaching of the young is left to the mother. Sometimes the mother, deserted by the male, takes refuge in the general social group, but more commonly remains apart with her offspring, caring for them, as it is well known that the instincts must in many cases be developed by the presence of a mother. Otherwise they are lost. This care fills her whole existence. When paternal protection is joined to maternal love they become indifferent to everything that does not relate to the welfare of their offspring. The young of all mammals are compelled to depend upon the mother, and there is that in the mother which forces her to care for and discipline her offspring. As Drummond observes, this tie once formed could never be undone. Hence he adds: "The training of humanity is seen to be under a compulsory education act."<sup>2</sup>

The discipline of animals by their parents, especially the mother, is full of interest, and, if we are to accept Morgan, most of animal life is the result of training by imitation, habit, etc. Undoubtedly the young of birds and mammals obtain most of their development from their parents. Nearly all authorities are agreed that birds must learn to sing. Mr. Wallace thinks that nest-building is kept up through the influence of tradition. A bird may inherit an indefinite tendency to express its energy in building, but how it will build will depend upon the tradition of the species. Exclude imitation and birds no longer build a typical nest.<sup>3</sup> Morgan thinks that nest-building in a definite way is an instinctive activity, but that it is modified by individual experience.<sup>4</sup>

I have lately received Ch. Letourneau's new book, "*L'Évolution de L'Éducation*," giving a somewhat comprehensive account of education in the animal kingdom, training of children among savages and various nations. The treatment of the history of education is a little different from any previous work. The superior animals, whether vertebrates or invertebrates, are occupied with zeal not only in raising, but also in training the young. We see the parents eager to initiate them into the practices most indispensable to the species life. First of all primitive men gave to their children a practical education, also varied and complex. (pp. 556-584.) The facts, he says, fully demonstrate that the education of animals rests essentially on the same basis as that of man, that in both training may pervert instinctive tendencies and inculcate new ones. (pp. 28-29.) Among animals

<sup>1</sup> *Ibid.*, p. 246.

<sup>2</sup> Drummond: "Ascent of Man," p. 279.

<sup>3</sup> Morgan: "Habit and Instinct," p. 233.

<sup>4</sup> *Ibid.*, p. 237.

education proceeds patiently by example and imitation, with but little corporal punishment. In human pedagogy the excess of authority and abuse of force are so common that a number of educators need to be inspired by a little of animal pedagogy. (p. 557.)

Although these points remain unsettled, the fact of maternal, and to a great extent parental care, protection and guidance remains one of the greatest forces of evolution. It is quite interesting to note the radiation of the maternal instinct even in the animal world. Not only have primitive human mothers adopted and suckled at the breast puppies, pigs, monkeys and other animals, but often animals adopt the young not only of their own species, but also of other species, and even the human child.<sup>1</sup> Geddes and Thompson say that among many animals we soon see the adopted young established in the affections of the adopted mother.<sup>2</sup>

Few, if any, instincts are common to all species and characteristic of all periods of evolution. By the cuckoo and cowbird "parental care is shirked, and with varying degrees of deliberateness the eggs are foisted in foster nests," and the young thus put out to nurse. Several cowbirds often lay in the same nest only to meet a fatal end, or the eggs may be simply dropped on the ground. "The unsocial life, the selfish cruelty of the nestlings, and the lazy parasitic habit have a common basis in the constitution. The insatiable appetite, the small size of the reproductive organs, the smallness of the eggs, the sluggish parturition, the rapid growth of the young, the great preponderance of males, the absence of true pairing, the degeneration of maternal affection, are all correlated, and largely explicable, in terms of the fundamental contrast between nutrition and reproduction, between hunger and love. Similar unnatural and immoral instincts in other birds, in mammals, and even in the lower animals, are explicable in similar terms."<sup>3</sup>

There exists a harmony between the instincts of parent and of offspring which is of fundamental importance and of considerable interest; these may be designated as complementary instincts. The young cry out, the mother instinctively and promptly responds; the mother acts often to no other end except the development of her young which, by an instinct of imitation, respond; the parent utters the warning note, the young instantly obey. To the parental instinct to train the young, corresponds the impulse to learn or develop. The desire to lead and submission to the leader, the inclination to teach and the willingness to be taught, the inclination to mould

<sup>1</sup> Chamberlain: "Child in Folk-Thought," p. 171.

<sup>2</sup> Geddes and Thompson: "Evolution of Sex," p. 271.

<sup>3</sup> Geddes and Thompson: "Evolution of Sex," p. 278.

according to a fashion and the plasticity of the young, are all in different degrees alike characteristic of men, children, and animals. "It may be that the mother teaches the child, but in a far deeper sense it is the child who teaches the mother."<sup>1</sup>

*Interest in the Species.* Whether altruism is differentiated from egoism, or whether they both have their origin in the same cell, as Drummond says, will not be considered here. It has been subjected to the general laws of evolution. "It does not supersede the reign of brute force, but rather qualifies it by tincture of human spirit."<sup>2</sup> Cope says: "The struggle for existence then among men ranges all the way from a rivalry of physical force to a rivalry for the possession of human esteem and affection. The ultimate prosperity of the just, asserted and foretold by prophets and poets, is but a forecast of the doctrine of the survival of the fittest."<sup>3</sup> Darwin extended the struggle for existence beyond the mere satisfaction of personal existence. Plants struggle to produce seed and animals to beget young.<sup>4</sup> The young of animals that take most care in developing their offspring, the children whose mother is a teacher, are most likely to survive. So training has become more and more a means of survival.

"The reproductive instinct in the lower animals has developed into the social affections," says Cope, "and these form a part of the character of the higher animals and, in a special degree, of man. The sentiments of sympathy and benevolence are probably outgrowths of the same." According to Geddes and Thompson the increase of the reproductive sacrifice which marks the mammal and its essential stages of progress, the increase of parental care, the frequent appearance of co-operation which surely secures the success of the species attaining it, such survival through love, sacrifice, and co-operation demands more prominence than the struggle of the individual.

On this point we can do no better than to present some points from Schopenhauer. While the species has its existence only in the individual, yet the "true nature of every living thing lies primarily in the species." The reproduction and nourishment of the offspring are of incomparably greater importance than everything else. The profound seriousness with which animals, including man, take reproduction and nourishment of offspring shows that the true being lies in the species. Reproduction and care are to a certain extent the

<sup>1</sup> Drummond: "Ascent of Man," p. 281.

<sup>2</sup> Hobhouse: "Ethical Basis of Collectivism," *Inter. Jour. of Ethics*, Vol. VIII, p. 155.

<sup>3</sup> "Origin of the Fittest," p. 237.

<sup>4</sup> Drummond: "Ascent of Man," p. 16.



most marvellous of all instincts. It is not a matter of taste and disposition, but constitutes the nature of man. It is the origin of parental love. The mildest animal will undertake the most unequal battle, even face death, for their young. In the case of man this instinctive parental love is guided by reason; but in bad characters the intellect is often the cause of its restriction or repudiation. It is one of the most powerful stimuli, and calls out all the resources of animals and man.<sup>1</sup> Again, Hartman points out that reflection of itself could never lead to the sacrifice of self-love, but it is the instinct of love that unconsciously provides for the coming generations.<sup>2</sup>

It must not be forgotten that action in the main springs from unseen impulses; and of still more importance is Wundt's statement that every act tends to go beyond the foreseen purpose and serve unseen ends. The teaching impulse is a radiation of parental care which, in a process of evolution, began in love for offspring, but has evolved into Seeley's love for the race, for *the man* in every man. There seems to be a feeling among teachers that the maternal spirit constitutes an important element in the genuine teacher, but still they wish to add others, generally quite indefinable. A good example of this is found in a correspondence with a teacher of nineteen years' experience. "I believe in the maternal instinct strongly as the basis of the teaching spirit in the body of our true teachers. I know it to be the basis of my love for my profession; but there is an additional spirit so much stronger in women than in men, which enables them to go out of themselves and become 'as a little child.'" A male superintendent writes: "The teaching instinct is implanted in every normal human breast. It is close akin to the parental instinct, if not a phase of it. There is no born teacher except as this universal instinct is somewhat more prominently developed in him than in his associates. It is a composite of the instincts of organization, companionship, leadership, and what is termed 'social consciousness.'" What can be greater proof of the maternal instinct in a woman than her power to become "as a little child?" So soon as we cease to think of the parental impulse as a conscious desire to perform in some way the office of motherhood or fatherhood, these indefinable, apparently different springs of action melt into unity revealing the great purpose of life. What does the immense tenderness and care for domestic animals, which many childless women manifest, mean? Why do childless men often adopt and rear a stranger's children? Several cases bearing out these points have been

<sup>1</sup> "The World as Will and Idea," Vol. III, pp. 309-317.

<sup>2</sup> "Philosophy of the Unconscious," Vol. I, p. 234.

reported. Some organizations for taking care of orphan and destitute children find that there are more childless people wanting children than they have children to seek homes for.

Among the Hebrews to be childless was considered the greatest evil that could befall a man or woman; to have and rear children was a large part of their religion, and the gift of children was often looked upon as a result of obedience. The promises and commands relating to care for the young are prominent. It was the goal of their earthly being. In many ways modern society tends to eliminate this fundamental function, but such cannot satisfy the far deeper instinctive nature. Hence its radiation and appearance under another form, the simple desire to do service some place, anywhere.

"The genuine, true schoolmaster," declares Froebel, "in the simplicity of his calling may not have recognized the spirit, may not have named it and declared it, and even now while thoroughly penetrated by it may not recognize it."<sup>1</sup> The union of school and life, family life and life of instruction, is the first and most inseparable prerequisite of the complete development of man.<sup>2</sup> What fathers and mothers are not capable of representing in themselves they seek in their son; namely, representation of pure humanity in and by itself. Only he who has tried to measure what fruits proceed from the union between parents and child can divine the common aim which is the representation of the highest and purest of the pure human entity. In the noblest moments of life the heart swells to fulfill this high mission of life.<sup>3</sup> To improve upon this philosophic insight which bases education on the universal instincts of motherhood and childhood, must at least be transferred to unborn generations. "Education is only the cultivation and completion of procreation."

So clear does it appear that teaching is a radiation of the parental instinct that no further evidence would seem necessary. Mr. Munroe, in his "Educational Ideal," arrives at the conclusions that the "feminine ethical sense" has been the great factor in educational progress. But there is another side to it, and that is where the relation is not so definite. It rises above individual offspring and seizes upon humanity. Bacon somewhere says that the man that marries not, marries, so to speak, the human race. It is that growing intuition that life is wider than the immediate offspring, and may be advanced by wider service; and, as we have seen, this wider aspect is not a pure human product. This radiation is one of the things that

<sup>1</sup> "Education of Man," Trans. by Jarvis, p. 84.

<sup>2</sup> *Ibid.*, p. 154.

<sup>3</sup> "Education of Man," Trans. by Jarvis, p. 109.

has dignified parental love. Richter expressed a part of a truth, at least, when he says: "No woman can at the same time love the four quarters of the world and her own child, but a man can. He loves the ideal." Jesus and his disciples had great parental reverence, and exalted parental love to love of humanity.

To him who sees not the force of Wundt's principle that every act tends to go beyond the foreseen purpose and to serve unseen ends, the complete consummation to be found in Weismann's doctrine of life may be confusing. This doctrine, briefly stated, is that the length of life is determined by the service necessary to the welfare of the species, that the length of life invariably varies with the needs of the species. A stronger biological background cannot be found anywhere.

"The duration of life is very different in different organisms. How is it that individuals are endowed with the power of living long in such very various degrees?" Formerly it has generally been attributed to difference in structure and chemical composition of the different species. The size of the organism, although a factor, cannot be taken as the cause. Larger animals require a longer life to insure the preservation of the species. Neither is there any fixed relation between growth and duration of life. The rate at which the animal lives is another influence on the length of life, but it is a mistake to suppose that activity necessarily implies shortness of life. The complexity of structure plays an important part and determines in part the time that must elapse before reproduction. The duration of life, whether long or short, is governed by the needs of the species; as soon as the individual has performed this work it ceases to be of value and must die, and with many animals ends at reproduction. But in most cases the individual may be of advantage to the species by tending the offspring for a longer or shorter time, either by protecting, feeding or instructing. "This last duty is not only undertaken by man, but also by animals, although to a smaller extent; for instance, birds teach their young to fly, and so on." When the external conditions necessary to insure the perpetuity of the species are hard, life is lengthened to meet such. The number of young destroyed in birds is proportionally very great, and we likewise find that as a rule they live to a surprisingly great age. According to his estimate, on an average, a pair of young eagles can only be brought to maturity about once in fifty years. Hence a great duration of life is provided animals according to their external conditions. "Long lives are really the shortest under the circumstances." "The duration of life is first naturally lengthened when the offspring begin to be really tended, and as a general rule the increase in length is exactly propor-

tional to the time which is demanded for the care of the young."<sup>1</sup> Death is not always preceded by a period of senility, or old age; and often occurs before the reproductive powers are exhausted. Again, "the protraction of existence into old age among the higher metazoa proves that death is not a necessary consequence of reproduction."<sup>2</sup>

Without entering into more detailed facts we may conclude that the duration of life is measured by the amount of service necessary under external conditions to maintain the species at its highest point of development, that the true purpose of life is not self, but service. Truly, the life that fulfills not this mission of service is an abortion. When that stage of development is reached where the species is regarded as a whole, then reproduction and care are not necessarily joined in the same organisms. In all higher animals and man, care, training, and education constitute a large part of this period of service. May not that genuine impulse to *self-completion*, which is to be distinguished from pleasure seeking, self-pride and personal ambition, have for its ultimate end service to the race?

Dr. Scott, in his article on "Old Age and Death," says that, while the conception of death serves to intensify the psychical life, and gives a foil and sense of earnestness, in soul life, love is greater than death, and the source of the greatest productions of art, religion and philosophy. The deep life of love is the tidal wave upon which these are upborne, and which often lingers after maturity in its highest radiations. The disinclination to quit life is strongest when the altruistic tendencies are strongest. This, he thinks, is shown in tables of suicide. Old men who most desire to live have preserved the higher irradiations in love and sympathy for their fellows. Lord Shaftsbury said that the ceasing of the opportunity to do good for others is the principal motive for fearing death in many old people of the best type.<sup>3</sup> Murphrey holds that old age is correlated with large families; and others hold that more radiated altruism is favored in the struggle for long life.<sup>4</sup>

*Feeling and Intellect.* What has this love of children, sympathy, devotion to humanity, life as service, and the like to do with that intellectual equipment—formal knowledge—necessary to all teaching? is a question intentionally postponed. For all practical purposes this is the fundamental question. The first step is to realize that the soul is infinitely larger than consciousness; secondly, that the feelings are fundamental while the intellect is a secondary product; thirdly, that it is the business of

<sup>1</sup> "Biological Memoirs," p. 155.

<sup>2</sup> *Ibid.*, p. 156.

<sup>3</sup> *American Journal of Psychology*, Vol. VIII, pp. 118-122.

<sup>4</sup> *Ibid.*, p. 75.

the intellect to devise ways and means to satisfy the instinctive longings, and that the impetus is given to life, not by the intellect, but by the feelings; that intellectual originality lies beyond the field of objective consciousness. The whole range of psychological investigation is not only tending in this direction, but evidence substantiating these points has been produced by Schopenhauer, Hartmann, Ribot, Paulsen, Wundt, Kidd, Drummond, Cope and others. Back of intellectual life is the "driver," call it what you may—Hartmann's Unconscious, Schopenhauer's Will, Paulsen's Feeling or Will, James's Fire or Fiat of the Will, or Münsterberg's Noumenal Will.

"When we turn our attention to the whole living and animated world," says Paulsen, "it soon becomes evident how secondary is the part of intelligence by the side of will." (Both Paulsen and Schopenhauer use will as synonymous with feeling.) The will, and not the understanding, gives life its purpose.<sup>1</sup> No psychology, says he, can help but confess "that the conscious element makes up but a small part of psychical life."<sup>2</sup>

Kidd points out the fact that reason beguiles a man into thinking that his own interests are all important, while the real forces are directed to the infinitely larger life, not only of a single generation, but of ages and generations yet unborn.<sup>3</sup> To him the evolutionary force is altruistic, not intellectual.<sup>4</sup> Schopenhauer calls attention to the universal expression, *heart* and *head*, as a true intuitive feeling of fundamental distinction. They signify the whole of man; but the head is always the second, the derived.<sup>5</sup>

But the more direct point of interest in this connection is the fertility which feeling gives to the intellect. One possessed with a passion for thieving often astonishes us by intellectual contrivances to meet such ends. The impulse to be rich develops an astonishing degree of intellectual acuteness. Anger and indignation inspire men with thoughts. The sciences were not developed according to a plan, they grew. "The germ of knowledge unfolds itself by a kind of inner necessity." "The greater and more fertile thoughts are, the less did they owe their origin to methodical invention."<sup>6</sup> Great thoughts seem to come of their own accord. "The will ultimately determines the direction of the thoughts and experiences a keen satisfaction at their successful realization."

<sup>1</sup> Paulsen: "Introduction to Philosophy," pp. 114-116.

<sup>2</sup> *Ibid.*, p. 121.

<sup>3</sup> "Social Evolution," p. 83.

<sup>4</sup> *Ibid.*, p. 263.

<sup>5</sup> "The World as Will and Idea," pp. 457-459.

<sup>6</sup> Paulsen: "Introduction to Philosophy," p. 203.

"Desire, love, fear, render the most obtuse understanding lucid," says Ribot.<sup>1</sup> Kidd finds the root of what appears to be the political genius of the Anglo-Saxon peoples, in the accumulation of the altruistic feelings which it has been the office of religion to develop.<sup>2</sup>

But Schopenhauer, above all others, has everywhere supplied the facts that demonstrate that the intellect operates under the guidance of the feelings. All his writings abound in such facts and especially his chapter on the Primacy of the Will in Self-Consciousness. A desired end may be earnestly sought by the heart, but regarded as only problematic, even beyond possibility, by the intellect, as in the case of a mother who never loses faith in the redemption of her son. A strong motive, a yearning desire, a pressing need, sometimes raises the intellect to a degree of which we had not previously believed it capable; difficult circumstances develop new talents, the germs of which were hidden from us; the stupidest man becomes keen under certain impulses. Biology and history furnish overwhelming evidence that altruistic impulses give an immense impetus to the intellect.

That marvellous development of a mother as outlined by Drummond, and the feminine intuition so dwelt upon by Mr. Ward have been strong biological factors in evolution. The dynamic agent in civilization, according to Mr. Ward, resides in the feelings. The mind force is the soul. Intuition is the power acquired by the mind of looking into a more or less complicated set of circumstances and perceiving the way of success; it is the "product of everpressing and unsatisfied desire," and has its origin in the emotional sense. "But it is in connection with reproduction that this quality is probably called forth in the most effective manner." "The prize is infinitely great and the effort correspondingly supreme. Every art is called into play." The influence of parental care has been a potent factor in developing the intuitive faculty which originally had to do directly with the interests of the race and its preservation and safety. Men frequently call it "common sense." Woman's intuition is a part of the maternal instinct and once highly specialized, having to do solely with the protection of mother and offspring. Mr. Ward further points out that this feminine intuition, developed by constant vigilance over the young, is still centered chiefly around the offspring even in developed woman; that there is after certain allowances are made a male and female trunk of the primitive intuition, or primary intellect; "the one adapted to sustenance

<sup>1</sup> "Psychology of the Emotions," pp. 440-443.

<sup>2</sup> "Social Evolution," p. 321.

and continuation, and the other to the protection and conservation of the race."<sup>1</sup>

If one were to speak of genius among animals where would he find anything more like it than in that astonishing activity seen in caring for the young? It is here that the question of instinct and reason is hotly discussed. Schopenhauer, in his chapter on "The Life of the Species," says: "We also see here how parental affection, like every strong exertion of the will, heightens the intelligence." The sea-elephant, whose young are not able to escape their hidden enemies until they have learned certain tactics, must be suckled on land. Hence, the females take their young ashore; the males form a circle around them in order to prevent them from returning to the sea when driven by hunger. Thus all fast seven or eight weeks. Almost all birds, and many mammals, feign lameness and cry aloud to decoy the enemy in a fruitless pursuit of themselves in an opposite direction from the young.

Genius is always inexplicable from any intellectual standpoint. Schopenhauer's admirable discussion on Genius would have taken quite a different turn had he conceived the Will to live in its wider sense, in its radiations which include higher life in the individual, and life in general; not mere propagation and care for offspring. Indeed he has well shown that "He (the genius) *seeks not himself and his own concerns*, this makes him under circumstances *great*."<sup>2</sup> Intellect never led him to thus abandon self to the good of humanity. Such characters were never made by logic. They are rather the product of that principle, "not ourselves," which consciously or unconsciously makes for higher life. "The work of genius has always been regarded as an inspiration, as the word itself implies, as the work of a superhuman being different from the person and only periodically taking possession of him."<sup>3</sup> Jurgen Bona Meyer says: "Talent, being self-conscious, knows the why and wherefore of its conclusions and principles. But for genius all that is in darkness. Nothing is more unconscious and involuntary than the process of thought of genius."<sup>4</sup>

Waldstein, in his late work on the "Subconscious Self," maintains that genius is a spontaneous action of that part of the mind freed from the chains of the intellectually "educated" part of the mind. "Such minds are the descendants not so much of their direct progenitors as of the whole human race."<sup>5</sup>

<sup>1</sup> "Psychic Factors in Civilization," pp. 92-179.

<sup>2</sup> "The World as Will and Idea," Vol. III, p. 150.

<sup>3</sup> "Die Welt als Wille und Vorstellung," Vol. I, Book III, sec. 36, and Vol. II, Chap. 31.

<sup>4</sup> "Genius and Degeneration," p. 37.

<sup>5</sup> "The Subconscious," pp. 22-24.

"The sublimest works of the intellect are quite possible," says Ferrier, "and may be conceived to be executed without any consciousness of them on the part of the apparent and immediate agent." Goethe said, "I write because I cannot help it. . . Indeed I prefer that the principle from which and through which I work should be hidden from me."<sup>1</sup>

*Why Pursue Art and Science?* A few years ago the writer defended the thesis that the pure pursuit of knowledge is only a means to higher development and self-perfection. Thus it was stated: "But growth or perfection is the end, activity the only means, and knowledge the stimulus by which it is produced. . . . Each new truth is only a stimulus to further pursuit."<sup>2</sup>

After the preceding biological survey we are compelled to throw this aside, or rather improve upon it, and declare that in the normal soul there is no such thing as knowledge for the sake of knowledge, no science for science's sake, no art for art's sake, no perfection as an end in itself.

So common is the idea of science for science's sake and the like, that it is entirely needless to present the whole discussion. Its advocates have been many and its opponents few. It has been enforced in various degrees and connections from Plato's lofty conception of a soul exalted to the contemplation of the ideal, of true being, which is both in itself and for man the Absolute Good, down to Tolstoi's late work on "What is Art?"<sup>3</sup> in which he strongly opposes the idea of art for art's sake.

In a back number of the *Art Journal* we find an article, "An artist, sir, should rest in art." Here it is stated: "She is a mistress who claims his sole love; and she has a right to do so, for she possesses an inexhaustible treasury of charms."<sup>4</sup> Haddon, in his "Evolution of Art," defines *Æsthetics* "as the study and practice of art for art's sake." He nevertheless points out the important part that the desire to convey information has played in developing art.

Marshall says: "The 'art impulse' is a blind impulse which leads men to *create* with little or no notion of the end they have in view." Wagner says: "In the artist the presenting force is in its very nature unconscious, instinctive."<sup>5</sup> Marshall finds the essential characteristic of art in the algedonic effect which it produces. Eliminate the pleasurable elements one by one and the æsthetic qualities disappear.

The impulse to communicate to others, to unburden one's

<sup>1</sup> Kay: "Education and Educators," p. 132.

<sup>2</sup> "The End of Education," p. 19.

<sup>3</sup> "What is Art?" London, 1898.

<sup>4</sup> *Art Journal*, Vol. XXXII, p. 368.

<sup>5</sup> Marshall: "Pain, Pleasure and Æsthetics," p. 100.



self, has been variously considered under the forms of self-assertion, self-realization, working over ideas, and the like. This impulse is strongly marked in poets of genius in whom new ideas are continually springing up. Hirsch<sup>1</sup> maintains that such poets do not write for the sake of making poetry but solely to give utterance to a burdened soul. Goethe was such a poet; he found his poetic basis "in his own bosom," wrote for himself and asked nothing from the public. Schiller took the basis of his poems from the outer world, and sought to arouse in humanity similar ideas. "To the public alone I now belong," said he. Again, in Beethoven, art was solely a means of self-expression. Wagner said: "One thing kept me up—my art—which was for me, a means not for the acquisition of fame and money, but for the communication of my views to sensitive hearts."<sup>2</sup>

Whence comes this impulse to communicate? By what means does the soul come to be burdened with a great message? If they have no reference to the outer world or the coming ages, why is not the Herbartian action and reaction of concepts in the soul sufficient unburdening?

For Herbart philosophy is the science of the action and reaction of concepts upon each other. The ego has but *one* special function—to preserve itself in its indestructible originality. Indeed he attempts to prove that philosophy has really no definite object other than the working over of concepts, the attaining of equilibrium among concepts. The only hints we have concerning the destiny of man<sup>3</sup> are to the effect that such working over concepts must take place as will approach more and more to the general equilibrium, to the end of producing a peaceful well being. Thus we have a psychology virtually devoid of cause or final end, and one by which the biological view of man is shut out. Had he attempted an application of his philosophy to instincts in general, radical defects would have been evident.

With Lotz the Idea of the Good is not restricted to the domain of action; on the contrary the whole host of action is related to the idea of the calm bliss attached to the Beautiful, the passionless and inactive modes of the mind only as a means whereby it is to be realized. But this he offers in opposition to the immense activity of the modern world. It has taken away that leisure of the Middle Ages, necessary for contemplation and self-perfection, which, in his chapter on "Work and Happiness," he maintains is "self-sufficing and self-rewarding." The soul rejoices in the enjoyment of its own activity,

<sup>1</sup> "Genius and Degeneration," pp. 18-70.

<sup>2</sup> *Ibid.*, p. 256.

<sup>3</sup> Herbart: "Psychology," trans. by Miss Smith, pp. 190-200.

and has no suspicion about its happiness.<sup>1</sup> Few have gone so far in asserting one's individual æsthetic enjoyment. It amounts to saying that every one should dress as he likes, express himself in his own way, even believe almost anything in regard to science. Supreme happiness is to give expression to what you have in your soul.

In the first issue of *Science* an article appeared on the "Future of American Science," which declares that it is destined to be distinctly and supereminently utilitarian. It is held that "when the investigator becomes himself the utilizer, when the same mind that makes the discovery applies it to useful purposes, the combined achievement must be ranked as superior to either of its separate results."

Against this new view of science the editor of *The Popular Science Monthly* takes a determined issue.<sup>2</sup> He claims that the writer in *Science* has reversed the motives of scientific study, that "the most exalted incentives in the pursuit of truth is that high appreciation of it which makes its bare discovery the supreme compensation of the investigator," and that this has ever been the sharpest spur to scientific research. But men are also impelled to science by the lower impulses of personal ambition, fame, or selfish and mercenary motives. However, the one supreme lesson of the history of science is, that the world mainly owes its great results to the single minded devotion to the pursuit of truth for the sake of truth alone.

Are these literary and psychological explanations satisfactory? Have we not glimpsed a higher biological view which satisfies these ideas of happiness, self-perfection, self-assertion, self-realization, contemplation and working over of ideas, and at the same time has its root in generations yet unborn? This higher comprehension is to be found in three propositions: (1) Happiness is a reflex on the soul of normal functioning; (2) all normal instincts are also biological; and (3) the end of the fundamental instincts which make for the higher life of the race, of unborn generations, is partly or entirely hidden from the individual, "so that when he serves the species he often imagines he is serving himself."

The child is happy only when functioning according to normal instincts; so it is all through life. A violation of normal functioning always produces what we call sin, misery, physical and intellectual degeneracy. A woman's supreme happiness is found when performing her function as a mother; but her happiness is a reflex of normal functioning, and not an end

<sup>1</sup> "Microcosmus," Vol. II, p. 307.

<sup>2</sup> Vol. XXII, pp. 844-848.

sought in itself. The same is true of the real artist, scientist, and philosopher.

The second proposition, that all normal instincts are also biological, points to the fact that the individual happiness which is the reflex of functioning according to normal instincts, is not an end; but that the same instincts that give this result have their ultimate root in the race. Or to state it inversely, the functioning according to the instincts that make for the higher life of the species, give us the strongest reflex of happiness. The proofs of the third principle are so evident in what has preceded that to restate them is unnecessary.

The greatest souls have intuited a principle higher than knowledge for the sake of knowledge. Wagner said: "Only by the highest power of love do we attain to true freedom."<sup>1</sup> Goethe declared that he did not know why he wrote. Ruskin says: "I am certain that in the most perfect human artists reason does not supersede instinct, but is added to an instinct."<sup>2</sup> To him all good is accomplished in the spirit of nest-building in which the builder boasts not of what she has built. "In the doers of the best there is an inner and evolutionary power which approximates literally to the instinct of an animal." All success in the arts or any other occupation depends upon "a solemn faith in the advancing power of human nature, however dimly apprehended." Matthew Arnold recognizes culture for culture's sake, but also that wider view of it which makes for the elevation of the race. "The expansion of our humanity, to suit the idea of perfection which culture forms, must be a *general expansion*."<sup>3</sup>

This higher biological view gives a wider and more exalted view of life and education, and yet should satisfy the advocates of truth for truth's sake, of self-assertion, and of self-realization. Self-assertion, self-realization, etc., have simply been transformed, so that the individual is not only realizing himself, but the highest possible "self." It is simply a higher ego that asserts itself.

To put the question of science for science's sake and the like a little more concretely, suppose that it was absolutely certain to every living man that Huxley's welcomed comet would, at the close of this generation, annihilate all possible forms of life. Can we conceive that our universities, laboratories and art galleries would still be crowded with men and women, secluded from the world, working with devotion and inspiration? Or suppose there was a universal law that every production, every discovery in art or science was to be immediately destroyed, and not the slightest

<sup>1</sup> "Genius and Degeneration," p. 270.

<sup>2</sup> "The Mystery of Life and Its Art," p. 25.

<sup>3</sup> "Essay on Sweetness and Light."

possible chance of their ever becoming known, what would happen to these things that are said to be pursued for their own sake? Under such suppositions the mere thought of such activities continuing unabated seems novel. Would a sound healthy intellect confine itself for years to the solution of a problem or writing a book, either of which must on the moment of its completion be annihilated? Many works of art and science have been produced under extreme persecution, but never, so far as the writer has been able to find out, without the possibility at least of such becoming the property of the race. But suppose some should continue to labor as usual, that might well be due to the fact that rudimentary organs of the mind as well as of the body tend to persist after they have become useless.

A very important fact is to be found in some objections already offered to the supposed unfairness of the above suppositions. One objection declares that such suppositions are not fair because we must take things as they are. Another who holds to science for science's sake, maintains, however, that under such conditions it would be useless to begin problems, since a lifetime is too short to complete a problem, and there would be no one to keep up the unfolding of science. Now if art for art's sake and science for science's sake mean that they are pursued *solely* for the pleasure they give the pursuer, no fairer conditions can be imagined; and any objection to such bears with it the all important fact that all such pursuits have a deeper psychological meaning. If pleasure of pursuit is supreme to the investigator, why should he be concerned whether it is ever worked out? The fact is without any reference to utility, as commonly interpreted, science and art look to the good of humanity *somewhere* down the line of the coming ages. The unfolding of art and science, while yielding the individual the strongest reflex of happiness, is nevertheless due to "a solemn faith in the advancing power of human nature, however dimly apprehended." We cling to this as a kind of prophecy and delight in the present because of the higher evolution we in some way intuit. Indeed we are driven to the conclusion that the universe is so intimately united that isolated parts cannot have independent and absolute value.

It is true that intellectual activity to a certain extent has been the great means of self-preservation, but the pure selfish side of intellectual activity would certainly lead to a concealment of knowledge and not to the impulse to communicate without recompense. Again it might be said that it grew out of the Puzzle Instinct, the impulse to exercise the intellect, as presented by Dr. Lindley, but we hardly believe the highest works of art and science have thus originated. Although

both of these factors play an important part in intellectual life, yet we must certainly make a distinction between the mere impulse to exercise the intellect, and such immense stimuli as results from motherhood, and the dominant feelings which look beyond the individual.

It is more generally attributed to a desire for self-perfection. This we have already treated, but suffice to say that self-perfection, whether physical or intellectual, is a biological basis for the operation of natural selection. On the contrary, had every one been content to work over his own ideas, solve his own puzzles, make his own discoveries, keeping everything in his own soul, the conditions and opportunity for selection would have been changed. As Drummond shows, the evolution of a mother was much earlier than the evolution of a father; and only by degrees was the mother instinct of service transmitted to and acquired by the father; and as Ward puts it, from the same trunk we thus have two apparently widely separated branches. This impulse, which appears to seek science for science's sake, art for art's sake, for the mere satisfaction it affords, is as truly in the interest of the race as the service the mother renders her children, which certainly constitutes her highest happiness. It has become to intellectual evolution what care for the young was to physical evolution. Through the impulse to communicate, to write, to develop art, evolution has been largely transferred to the environment.

That much of science and art, and in fact every field of learning, is and has been prompted by the mere worldly consideration of honor and gain, no one would deny; and their influence may be rarely absent; but to say that they have been supreme, is by no means true. The merely selfish side of the intellectual struggle, which tends to conceal all its discoveries, is also found in various pursuits of knowledge. We frequently hear of a scientist or investigator who says that he absolutely has no interest whatsoever in his discovery or problem after it is produced. Such a life is either affectation or an abortion. To know that others are ready and waiting to apply it to the good of humanity alters conditions; but to be absolutely indifferent as to whether such is ever made serviceable, is certainly evidence of moral and intellectual degeneration.

Thus, after all proper allowances are made, that which has been called knowledge for the sake of knowledge, science for the sake of science, art for the sake of art, culture for culture's sake, perfection for perfection's sake, is in reality a biological impulse guiding the intellect in the interests of the race and of higher evolution, by which a man is drawn *out of himself* in order *to be himself*. In art and science man acts, to use an expression of Prof. Dewey's, "not as a mere individual, but

as an organ in maintaining and carrying forward the universal process."<sup>1</sup>

#### V. PRACTICAL APPLICATION.

One is likely to be met by the old dogma that knowledge and feeling are in inverse ratio; or that this presentation would make the emotional savage and negro the most powerful in intellect. Both of these objections are answered by the fact that feeling, instinct, will, intuition, or whatever one wishes to call it, here considered, is not identical with *excitability*. It is needless to discuss the ultimate relation between feeling and intellect, between instinct and reason. There is a voice in every one that speaks a difference much more easily felt, or intuited, than defined by a logical combination of words. The facts are, what is consciously perceived by many is often unconsciously wrought out by others. We have seen how the doll impulse quickens the intellectual impulse of the child; how patience, self-control, and intellectual shrewdness develop in animals that care for the young; how the savage mother became a poetess and inventor for educational purposes, under the stimulus of a child; how the idea of service has quickened the intellects of great teachers and philosophers; how Confucius, Socrates, Jesus, and Froebel became teachers *par excellence* under this impulse; how Matthew Arnold and Seeley have shown that the great function of Jesus was to revive the power of *intuition*, that the greatest need was more inwardness, that the secret of a true teacher's power may be entirely unknown to him. Are we then to place our chief stress on formal methods, and ignore or give a second place to the qualities of the teaching impulse as found in history? Or shall we base it upon the background of racial development?

What has been said does not question *the necessity for training teachers; but the kind of training, the point at which, and order in which, training should begin and proceed*, are problems for consideration. He who conceives life as herein presented, and that the child is not to be perfected and brought to maturity as a mere end in himself but as a means to the higher life of yet unborn generations, has the highest conception of education, and has intuited the unconscious force of evolutionary progress. Such a conception gives us the widest possible basis for education. It becomes nest-building in the interest of the young. Under such a conception the highest business of the State is to furnish every possible virtue for bringing her young to the fullest maturity.

The best tests of this nest-building and rearing is whether

<sup>1</sup>"Evolution and Ethics," *The Monist*, Vol. VIII, p. 341.

the young are fitted to render the service demanded of them in after life, whether the sacrifice is a fit offering. The animal instinct leads the mother to such development of her young as will insure the highest life of the species, and not merely to nourish themselves for a short period and pass away. That dominant element in our education which makes for individual pleasure and ease, is the cause of much degeneracy. That maturity which makes for the development of the race, does not demand the sacrifice of individuality, but rather develops the highest personality. On the other hand, an overload of society culture aimed at individual pleasure, breaks up personality and diverts the natural instincts of life. "When the will (feeling) is not concerned, the understanding is at a loss to know what to do; they 'are bored.' Flying from tedium they seek excitement for the will in society; gossip and calumny serve their purpose, and when that topic is exhausted, gaming must come to their rescue and fill out the idle hours with such trifling excitements for the will as are provided by the shifting chances of gain and loss."<sup>1</sup>

*Questionnaire Results on Normal Training.* The 464 general returns contain points of interest and value, but coming from students and teachers of limited experience they will not be specially treated in this connection. One hundred and fifty-two of the *individual* returns treat the value of normal training; 103, the evil effects; 54, the modifications needed.

*Values.* (1.) Gives more confidence in ability, and in some cases furnishes one with a more thorough education. (2) Greatest result that normal training can accomplish is to inspire its students to become unceasing students of the *science* and *art* of education. (3) Aids in suggesting best methods of presentation. (4) Its greatest value lies in the power acquired to do work in an orderly and methodical manner. (5) Gives opportunity to study the ideas and methods of the best educational leaders, and to observe these methods in actual practice. (6) Gives teacher business-like habit in the school room and an idea of the mental habit of children. (7) A scientific knowledge of mental phenomena in children. (8) One great value is the opportunity for study of child psychology and the teaching atmosphere. (9) Contact with strong and stimulating minds. (b) The example of good teaching. (c) Educational enthusiasm which may be communicated. (d) Emphasis placed upon methods (when not too mechanical).

(10.) The great value and real function of normal training is to formulate insight into the principles underlying the art of teaching, to present usable ways and means, and to get the teacher acquainted with child life and the conditions of child growth.

(11.) By going to a normal school students get some idea of a school, the many problems and dispositions to be dealt with; they learn something of what it means *to be a teacher*.

(12.) Greatest values are: in the storing the mind with a stock of information to draw upon, and the professional spirit and enthusiasm

<sup>1</sup>Paulsen: "Introduction to Philosophy," p. 117.

which comes from associating with so many others bent on the same purpose.

(13.) Normal training faces the pupil about, and helps him to look at the various subjects in the curriculum from the point of view of the teacher. As pupils in normal schools succeed in thus changing their point of view, in direct ratio is the training valuable. (14) Some always regard the subject as so much information to be acquired, and they, I think, get least from a normal school. Normal training opens the pupil's eyes to the *art* of teaching, shows him the really "undiscovered country," and the few regions that have been explored.

On the subject of values of normal training there exists a variety of opinions among teachers. Some expect no good whatever, others differ as to the points of greatest value. A superintendent of long experience writes that he never saw a good teacher come from the normal schools. The chief idea to be gathered from these teachers of experience, most of whom are normal graduates, is that the best results are the opening up of the mind to the broad field of work, contact with strong and stimulating minds, and the infusing of an inspiration to guide future development. The great difference attached to the value of normal training, as found in the *individual* returns and in the *general* returns, may be roughly stated by saying: the wider the experience the less value is placed upon the technical information given at these institutions. Thus there is a general agreement that some kind of training is necessary, but there is also a feeling that the present is not altogether satisfactory.

*Evils.* (1) Tends to make pupil over critical. (2) A very evil effect is the confusion of method and device. In fact very few normal graduates seem to have any clear conception of the significance of method. They are loaded with patent devices, formulistic orders of procedure, with not the least comprehension of any principles involved, if, indeed, there are any! (3) Too much "cramming" is necessitated. (4) Many teachers try to use the methods and suggestions they have received without making them a part of themselves and modifying them to suit the needs of their pupils. (5) It is apt to give the "patient," abnormal conceit and an impatience of experience or advice. (6) It substitutes the bare knowledge of routine work for that wider, more comprehensive knowledge of life and the world. Tends to crush individuality—to make teaching mechanical, methodical by lifelessness. (7) It is apt to emphasize professional training as of more value than scholarship, whereas scholarship should precede training. (8) Evil effects of normal training are shown chiefly in servitude to method.

(9.) (a) Encouragement to the "commercial spirit" in education. The State stands back of, hence encourages the training of hosts of young people superficially educated to do the work of teaching. (b) Educational conceit which is fatal to all true education. It deadens the spirit. (c) An arbitrariness which comes to narrow minds that have found what they believe the only method.

(10.) The great danger from normal schools is that they are apt to suppress leadership and social qualities, and to fail to give the student such training as will make him easily adaptable. (11) One evil effect



is that many go out to teach with some certain methods which they think ought to apply everywhere—this being impossible, a failure is the result. (12) Its evil effects are in its teachers attempting to follow its methods which they only partially comprehend: thus making themselves mechanical and destroying what natural tact they may have originally possessed.

(13.) One evil effect is the stress laid on "method" as an implement for any one. He gets to have his pet methods, taken from books, and usually a perfect misfit for his style of teaching. The teaching of methods for all sorts of cases makes the pupil in a normal school think that if he only follows this or that "method" all will be well. A method is an expression of a teacher's individuality, and one person's method will hardly fit another person, better than one's shoes will fit another's feet.

It has been necessary to so extol the values of normal training in order to insure their establishment that the evils have been, in the main, omitted in all such discussions. But now, having been established, it is to be hoped the evils may claim attention, be guarded against, and weeded out as far as possible. The loss of individuality and the mechanizing of instruction by an overload of methods are the primary evils. Imitation is a fundamental principle in development, but we must distinguish between *conscious and unconscious imitation*, between that which is *unconsciously assimilated to one's personality and the taking on of some other personality*.

*Reforms Needed.* Our normal schools should have nothing to do with "subject matter," but leave that to high schools, academies, colleges, etc. (1) They should devote their whole time to the study of pedagogy in all its branches. (2) More time to finish the amount of work or raise the standard for entrance. Proper methods used throughout all classes and grades. (3) Less theory and more practice and observation work. (4) Student needs more practice work in working with and observing children. (5) Need a better standard of scholarship, and an understanding that broad scholarship must precede special training. (6) Modification needed is men of more liberal education as instructors in normal schools. (7) Normal schools should follow a more thorough culture course. Let life certificates mean something in education more than brief courses of a few short weeks over a great variety of fields with no thoroughness in any. (8) The modifications will be the natural outgrowth of child study and the introduction of certain ideas that are constantly arising in the minds of great educators and philosophers. (9) Teachers should be taught to think more of their individuality and less of set rules, laws, etc.

(10.) In Massachusetts I think too much time is given to mere scholastic work and too little to the presentation and review of various subjects from the teaching standpoint. But the theory that the normal school should chiefly teach how to teach is, I think, correct, and is followed to a greater extent in practice here (Nova Scotia) than in Massachusetts.

The following outline of "An Ideal Normal School Under Ideal Conditions" was furnished by the principal of a leading normal of Massachusetts:

(1.) I would require graduation from college as a condition of admission.

(2.) I would make the length of the course three years.

(3.) The course of study: (a) Should include no academic branches; (b) it should include the following professional subjects: psychology, the science of education, methods based upon principles, and teaching under criticism; (c) students should observe the teaching of others for one or two hours a day during at least a half a year, and should practice teaching one or two hours a day for the same length of time. I would have every lesson given by students criticised in its plan before it was given, and in its work after it was given. This criticism should be done partly by the training teacher in whose class the work was done, and partly by a normal school teacher. I would favor child study throughout the entire course and through life as well. My model school should be equipped with first-class teachers, thoroughly grounded in the science of education.

(4.) The only provision that I would recommend for the examination and certification of graduates would be the faculty of the normal school.

(5.) Normal teachers should be highly educated men and women, who are also thoroughly trained in the science of education, and have had experience. They should be elected by experts in education, and should be responsible only to such experts. The course of study should, in the main, be prescribed by the faculty of the school.

(6.) I would make suitable provision for the preparation of teachers for secondary as well as for elementary schools. I would not favor the addition of any departments which were not professional.

The reforms demanded by these teachers in the main look towards the attainments of the results as pointed out under values of proper normal training.

*Suggestions on Training.* What can training do for the feeling and instincts which are said to be fundamental? This brings us to the fundamental thesis of the practical part—that training must primarily aim at the fundamental instincts, and only secondarily at formal presentation. The foundation for training is found in the fundamental principle shown by Morgan, that the congenital basis or background needs examples, training, and association, for development, and indeed the development is never so complete as it may be made by habit and acquisition.<sup>1</sup> Plasticity is not an end in itself, but a means. It is the plasticity of the instincts that has made domestication possible. We can hardly approach education from a proper standpoint without a study of domestication and its effects.

The first and highest thing normal training can do for teachers is to enable them to see, rather feel, the great significance of life and their function in it. Bearing in mind that there are many other things that can be done to help the teacher, I do not hesitate to place this first. Principal Russell has said the very first step is to awaken "the maternal interest and the scientific interest," that when entering, interest in

<sup>1</sup>"Habit and Instinct," p. 183.

children is yet potential and latent. Give a woman of ordinary intelligence a strong desire to be serviceable to children, and she will find a way to teach them. She will then seek ways and means with a spirit and insight that the machine-teacher can never possess. So long as students of education are not inspired by high ideals, rules and principles of education are dead, and become only a tool of the intellect for the accomplishment of temporary ends.

The power of an intense purpose to heighten the intellectual insight not only operates on the teacher, but also on those taught. Hawtrey declares that under the influence of sympathy, suspicion, deceit, meanness, and dullness seem to be taken away and replaced by intelligence, candor, simplicity, etc.<sup>1</sup> N. Munroe considers some of the most important qualifications of a teacher, while susceptible of training, to lie so far back of ordinary educational influence as to appear to be innate.<sup>2</sup> The love of offspring does not necessarily begin in children; it may begin in the wider radiations. The desire to reform the world has no other psychological explanation than to prepare for offspring.

The first requisite is a supervisor whose soul is inspired by the sacredness of life. Perhaps no stimulus can be stronger or exert a greater influence on those expecting to teach than contact with the genuine manifestation of this impulse. No soul can communicate or engender in others that which it does not embody in itself in a genuine manner. As Fichte has said, without this higher conception no one can be a scholar or teacher. Indeed its absence implies the opposite, which leads to the "disease of word-making" in which no idea is audible. The child's instincts respond to certain types of character rather than to forms of speech or presentation. "There is a virtue even in the look of a great soul." Mr. Street finds that out of 183 answering the question as to what in your teachers has influenced you most, 149 mention the manner of the teacher.<sup>3</sup>

In the replies of 55 college presidents and representative men to the question: "What is the Best Thing College does for a Man?" influence of personality everywhere dominates. "It is the testimony of most of these writers that of the two elements which represent so large a part of college life—instruction and personality—personality is by far of superior importance. When President Jordan says, 'The best thing a college, as a rule, does for a man, is to bring him into contact and under the inspiration of other men of a higher type than he is

<sup>1</sup> Kay: "Education and Educators," p. 438.

<sup>2</sup> *Ibid.*, 448.

<sup>3</sup> "A Study in Moral Education," *Ped. Sem.*, Vol. V.

likely to meet ;' and, when Dr. Parkhurst says, 'While books can teach, personality only can educate ;'—they are simply declaring that personality is the great power of college."<sup>1</sup>

The power of great men lies not in their knowledge but in their ability to awaken a corresponding impulse in others. It is deep speaking unto deep. Froebel says of Pestalozzi : "He sets one's soul on fire for a higher and nobler life, though he has not made clear or sure the exact road to it, nor indicated the means whereby to attain it."<sup>2</sup> Where you find a normal school whose head is thus inspired, you will find a school that sends out fewest machines. The normal school that has furnished the most successful teachers in the South owes its success not chiefly to its courses in pedagogy and psychology or any other kind of formal preparations, but to the life and spirit infused into it by the executive. The trainer of teachers "must have a life alive within him."

Exact formal psychology can have no value for the purpose under consideration. But who has suggested that the teacher should take such a narrow conception of psychology? Is not the development we have been considering a psychological one? Is there not such a thing as a psychological study of nature? Let students become thoroughly imbued with the psychological spirit of great teachers. It is not necessary to call it psychology; the best teaching does not label every idea. Base more on this psychological spirit and less on examination tests. The history of education should be made more psychological and less chronological.

Not only does child study become necessary, but its practical value in developing the best elements of teaching power has been demonstrated. Mr. Russell shows, from letters received, that teachers having such training reveal a rare apprehension and comprehension of the highest pedagogical principles. If child study, properly conducted, will not awaken a permanent interest in children, how can it be done? Certainly not by "booming" teaching as a means for making a livelihood. Child study will do the greatest work of any science, if it only kindles the instinctive interest in offspring and directs education more to the service and interests of the race, creates an interest in motherhood, and banishes the cuckoo method of preserving the species. *Unconscious absorption into the life of the child is the necessary thing.*

From the point of view which we have taken it is evident that the study of education should be a liberal part of all education. It brings to view the highest self, prepares one to

<sup>1</sup> *The Forum*, Vol. XXI, pp. 44-53.

<sup>2</sup> Bowen : "Froebel and Education by Self-activity," p. 18.

fulfill the great object of life, and to properly employ their lengthened life. Almost all boys and girls, no matter what occupation they may follow, will become fathers and mothers. Then should they not, above all else, learn to *feel* the sacredness of the child, of fatherhood and motherhood? To suppose that they will get it from that formal presentation of the so-called culture-knowledge is a delusion, the proof of which is seen on every hand. On this point Spencer's oft cited presentation should be studied by every parent who proposes to educate his children. "Seriously, is it not an astonishing fact that though on the treatment of offspring depend their lives or death, their moral welfare or ruin; yet not one word of instruction on the treatment of offspring is ever given to those who will hereafter be parents?" "Consider the young mother and her nursery legislation" Her memory crammed with words, etc., her intervening years since college spent "in practicing music, in fancy work, in novel reading, and in party going: no thought having yet been given to the grave responsibility of maternity."<sup>1</sup> Make the study of education a part of a liberal course of education and we will have better parents, better educated children, better equipped teachers, and less need of teachers.

By nature women are strongly endowed with the care of offspring. For months the mother nourishes the child in her own body; later her instinct is projected outwardly, and she takes the lead in nest-building. Thus we see her intuitive instinct striking at every form of evil that will damage her offspring. Though weaker, this element is not wanting in man. These two branches of the same root develop along different lines. Occasionally we find a woman's soul in a man's body, and *vice versa*, but that is not common. In a general way, woman's teaching, when she does not mechanically work under man's régime, pierces that deep ethical nature of the child's soul and touches off the deeper emotions that largely regulate life. On the other hand it will be found that man consciously or unconsciously puts to the front the struggle for life which the male has especially represented throughout evolution. It is interesting to observe the widely different points emphasized by men and women in teaching the same subject.

A man will much more frequently be found holding up a character as an example of and inducement to worldly success. But what is distinctly more characteristic of man, is his creation and love of ideals, that impetus to perfect self which in highest souls becomes something almost divine, and exerts an immense influence on the life of the young, especially during adoles-

<sup>1</sup>"Education," pp. 55-58.

cence. Accordingly the corresponding instincts are suited to the child's development. A woman's deepest interest in children is for the small and helpless. Man has little interest in small children and barely none in helpless babies. His interest grows as the young develop; while the woman's, if anything, tends to wane. Mothers regret to see their children advancing to maturity, but fathers anxiously look forward to this.

If these rough distinctions are in any wise true, we may find a partial answer to the part each sex should play as teachers. This paper does not ignore the function of the struggle of life as a factor in evolutionary civilization; but it is to be softened down, and that is certainly universally taking place.

We see that a woman cannot run a man's machine, neither can a man do a woman's work. The nature of woman, her relation to the child, and the ethical influence of her teaching, make her, when moved by the mother instinct, the teacher *par excellence* for children. Just how soon the masculine influence that makes for a wholesome struggle should come in is hard to say. Neither of these elements is entirely absent in any good teacher, but it is the preponderating element, of which we speak. In short, grammar schools, normal schools, etc., have fallen too exclusively into the hands of women. *The adolescent must not be deprived of that inspiration which flows from a masculine soul striving after ideals of perfection.*

## BOOK NOTES.

G. S. H.

*Das Kind als Künstler.* Von C. GÖRZE. Hamburg: Lehrervereinigung für die Pflege der künstlerischen Bildung, 1898. pp. 36, with 8 plates.

Within very recent times the Germans have manifested a very lively interest in the American child study movement, as is evidenced by the numerous translations of American studies and the frequent appearance of American contributors in reputable German reviews. Herr Götze's monograph represents a movement organized the past year in Hamburg. A teachers' association, of which he is the secretary, invited students of childhood in different countries to send for exhibition purposes sets of children's spontaneous drawings. The numerous inductive studies by Lukens, Barnes, Sully, Mrs. Maitland, and others, were summarized and discussed, as were the spontaneous drawings submitted by the children in the kindergartens at Brussels and in Japan; in the elementary schools of Hamburg and West Springfield, Massachusetts, and from the American Indians, and the Hovas (in Madagascar). The drawings which illustrated Lukens's *Studies in Children's Drawings* (*Pedagogical Seminary*, Vol. IV, pp. 79-110), and Sully's *Studies of Childhood*, were also reproduced. The spontaneous drawings, which were exhibited, illustrated such stories as Johnny-look-in-the-air, little red riding-hood, George Washington and the cherry tree, and Hansel and Grätel. The conclusions which the Hamburg teachers formulate follow in the main those already stated in the *Pedagogical Seminary* by Barnes and Lukens. This, indeed, is the chief criticism to be passed upon Herr Götze's monograph—it follows too slavishly the methods, illustrations and conclusions of American investigators. In a field so rich in possibilities as children's drawings, the final word has not been spoken; and the regret is that these German teachers did not push their investigation a little farther than this report would indicate that they did.

WILL S. MONROE.

*The Genesis and Dissolution of the Faculty of Speech: a Clinical and Psychological Study of Aphasia.* By JOSEPH COLLINS. New York: Macmillan Co., 1898. pp. 432. Price, \$3.50.

In a field of thought so much explored in recent times as that of aphasia, a book bringing together the most important conclusions of the diverse workers is certain to be accorded a hearty welcome. Dr. Collins gives his readers in the opening chapters of his book an admirable summary of the investigations of Broca, Wernicke, Charcot, Hughlings Jackson, Kussmaul, Seguin, and others. This part of the work is so well done that it may be commended as a model to writers of treatises on occult scientific subjects. Broca, as Dr. Collins points out, is entitled to the largest measure of praise in any critical estimate of the worth of the results of investigators of aphasia, since it was he who first indicated the seat of the faculty of language and the location of the lesion that interfered with its production. It was

Wernicke, however, who furnished a basis for the modern conception of sensory aphasia, by interpreting the phenomena of word deafness and blindness. Whereas, Charcot's explanation of aphasia based on an apparent psychological analysis of speech did more to prevent its true interpretation than any writer who has explored the field, Dr. Collins maintains. Charcot's renown was so great as a physician that his utterances were considered *ex cathedra*, and were accepted as the truths before they had been sufficiently corroborated. Charcot, it will be remembered, taught that speech centers were in pairs, two for the reception of information—the auditory and the visual—and two for the emission of impulses representing ideas—the articulate speech and the graphic motor center—together with the autonomous action of these centers. Dr. Collins marshals a wide range of evidence which denies the autonomous existence of any one of these centers, and asserts the absence of the fourth—the graphic motor center—for the registration and the regulation of writing movements.

Of special interest is Dr. Collins's grouping of the different forms of aphasia. He notes (1) true aphasia—aphasia of apperception due to lesion of any constituent in the zone of language. If due to lesion in the visual areas and centers, it is visual aphasia; in the auditory areas and centers, auditory aphasia; in the center in which are stored memories of the movements necessary to externalize the word by speech, articulatory kinæsthetic aphasia. (2) Sensory aphasia, due to lesion of the central and peripheral sensory paths leading to the zone of language. (3) Motor aphasia due to lesion of the motor pathways over which motor impulses travel in passing to the peripheral speech musculature. (4) Compound aphasia, due to a combination of two or more of these. Association or transcortical aphasia the author classifies with sensory aphasia, the variations he regards as being in accordance with the location of the lesion between speech areas in the zone of language. The style of the book is both simple and thorough, and it is certain to be helpful alike to the layman and the alienist.

WILL S. MONROE.

*The Mental Affections of Children, Idiocy, Imbecility and Insanity.*

By WILLIAM W. IRELAND. Edinburgh: James Thin. 1898. pp. 442. Price, 8 shillings.

While containing a few pages of the author's former work on *Idiocy and Imbecility*, this book includes so much fresh matter, and such considerable changes in the chapters retained, that it has very properly been given a new title, and it may be considered a new book. Intended mainly for the alienist, the author has not been unmindful of those who have a philanthropic interest in the care and guardianship of the defective classes as well as of "the rising school of psychology in the United States," which has found interest and instruction in the lessons to be gained from mental pathology. "Nor do I yet despair," he adds in the preface, "of receiving some little attention from the students of psychology in Great Britain."

His treatment of the development of the brain in childhood must prove helpful to students of genetic psychology generally. Here, as elsewhere in the book, one gets the mature views of an alienist who has been long and intimately identified with the care and training of mentally deficient children, together with the results of many other workers in cognate fields. Next in point of pedagogic value comes the chapter on sensory and mental deficiencies of idiots, and after this, the chapter discussing the methods of educating idiots and imbeciles. Dr. Ireland believes strongly in the correlation of mental and physical training. He advocates the early segregation of mentally deficient children—as early as seven, providing the school course may



be reasonably long; but if it must be abbreviated, the years from 12 to 16 promise the best scholastic results.

In his discussion of the association of feeble-minded children one with another, one might wish for more outspoken utterances on the bad effects of herding large numbers of defective children in big institutions. The crying need to-day here—as with normal children—is more individualization. Since Dr. Ireland's book is certain to prove as useful to the teacher as to the physician and the psychologist, one regrets the absence of a chapter treating of the organization of day schools for the feeble-gifted mentally in the larger cities and towns—schools similar to those organized in London during the past ten years under the lead of Dr. George E. Shuttleworth. Dr. Ireland's book covers a wide range of interesting topics; it has a wealth of illustrative cases, and there is a good index.

WILL S. MONROE.

*The History of the Lowell Institute*, by HARRIET KNIGHT SMITH. Lamson, Wolfe & Co., Boston, New York and London, 1898. pp. 125.

This book is the first authentic history of perhaps the most beneficent lecture institute in the country, and the importance of which to Boston and New England has been of the very highest. It was established by John Lowell, Jr., nearly sixty years ago, and was so substantially endowed as to be able to command almost any man as lecturer and remunerate him generously. It was at the time when the lecture platform was at its glory, when almost any one that had an idea could deliver it in public for a fee of from \$5 to \$50. We are told that Wendell Phillips's "Lost Arts" was delivered over two thousand times. Indeed, from 1825 to 1850, lectures and lyceums were almost an epidemic in New England; and, as the prejudice against theaters was strong, lectures in a sense took their place. During the winter of 1837-38, twenty-six courses of lectures were given in Boston, not including those courses that consisted of less than eight lectures, and they were attended by about 13,000 people. It was felt that the resources of this lecture system were too meagre to induce the best men to make thorough preparation for systematic courses, and that the literary and scientific character of its work should be improved; and it was with this purpose that Mr. Lowell instituted his fund. He is described as "a young Bostonian who was intended by nature for a statesman, but whom the caprice of fortune had made a merchant." The donor was at the time thirty-four years of age, and the sum, when he bequeathed half of his property for the purpose, and this sum with the accumulations at the time of his death amounted to about a quarter of a million of dollars. It has been admirably managed. The first lecture was given in 1839, by Edward Everett, before about 2,000 people, and the first course of lectures was by Professor Silliman, the Yale geologist. Up to January, 1898, 427 courses or 4,020 free lectures have been given by 352 different lecturers. One-tenth of the income of the fund is annually added to the principal, and the remuneration for a single course of twelve lectures is now as large as the salary of some professors in small colleges. Professor Lovering, the Harvard physicist, has given the most lectures, 168; Aggasiz, 116; Silliman, 96; Cook, 92; and among the other names are Gray, Pierce, Weyman, Tyndall, Whitney, Newcomb, Ball, Proctor, Young, Langley, Gould, Wallace, Geikie, Dawson, Darwin, Mark Hopkins, Peabody, Storrs, Drummond, Lowell, Childs, Whipple, Howell, Bryce, etc. Literature has often been enriched by the publication in book form of many of these lectures. Aggasiz was first brought to this country to give a course.

*Loom and Spindle, or Life among the Early Mill Girls*, by HARRIET H. ROBINSON. With introduction by Carroll D. Wright. Crowell and Co., New York, 1898. pp. 216.

The author contributes an inside view of the work of a new system of labor which had been transplanted from England and which originated with the application of power to spinning and weaving. The American manufacturers at Lowell offered the attraction of good homes and wages, and brought thus many of the best young women from New England farms, who were educated and religiously trained, and who continued their study and published a literary journal entitled the *Lowell Offering*. The author was one of these girls. This book is also valuable for its details and economic history and for its moral, that honest work is an intellectual stimulus, and although factory life seems to have degenerated, there is no doubt that even now it has a beneficent influence for very many of its employees. The *Lowell Offering*, the first number of which appeared in December, 1840, had as a sub-title, *The Repository of Original Articles Written by Factory Girls*. The publication grew out of a desire of these girls to improve themselves, and was the organ of the first woman's literary club in the country. The club itself was first proposed in 1837. The journal was continued through five volumes, and after two years of suspense, three more volumes, under the title of *The New England Offering*, appeared. The range and character of the Offerings were remarkable, and we have assurance that there was absolutely no revision. These girls were idealists, and their paper was considered good Sunday reading. In all there were fifty-seven contributors, and in 1847 seven books had already been published by these contributors. On the whole, this little book has an unique interest.

*Nature Study in the Elementary School*, by MRS. L. L. WILSON, Ph. D. The Macmillan Co., New York. Teachers' Manual, 1897, pp. 262. First Reader, 1899. pp. 253.

These two volumes are by an experienced teacher unusually well trained for nature work, as her doctorate at the University of Pennsylvania in this department attests, and a visit to whose well-filled rooms in the Philadelphia High School will repay any teacher. The matter is arranged according to months; in September, for instance, the beginning of the school year, the weather is first studied, then a dozen plants and nearly as many animals; in October, the same topics with fruit added; in March, stone, and in April, May and June a much larger number of spring plants. The author's course has been already subjected to the test of practical application, and she also believes it may be pursued with profit to teacher and pupils in any one of the first four years of school life, however poorly equipped the school may be. It is especially intended, however, to meet the needs of the grade teacher in the city public schools; and seeks to remove the objections implied in the two questions: can I teach nature without scientific training; and when and how in the city can I gather my material? All it needs is interest and effort. A careful and well selected bibliography of the subject is added. The author assumes that sense training and observation, while necessary, are not the end chiefly sought in nature study, but rather the cultivation of judgment and imagination. The course presupposes at least an hour and a half a week; excursions and various related work are suggested, and myths and poems named, with the authorities for each, are given at the end of every topic. The illustrations are well selected, numerous and clear, and on the whole it can be said to have no better introductory book.

In the First Reader, the design was to bring to children literature on nature that should have to their minds the same interest that good books and magazines have for grown-up people. It is proposed that the nature lesson should precede each literary exercise. Some of the poetry is to be memorized and questions to develop the child's taste, and the months are followed as in the above manual. As many of the topics are the same as in the manual, much of the more elementary part of the reader was written by the author, and nearly every exercise is concerning some pictured object. The matter is adapted for first and second grades of school work.

*Tales of the Heroic Age; Siegfried and Beowulf*, by ZENAIDE A. RAGOZIN. Putnam's Sons, New York, 1898. pp. 332.

This trim and attractive volume, with eight full-page illustrations, is devoted to a digest of these two stories told in a pleasing and effective way. They are not translations, but addressed to childhood, under the conviction that myth is essential for childhood, and that if children cannot have fairy tales they invent them. A preface of twenty-two pages is devoted to the account of a German girl in New York, who had been brought up by her parents on the theory that everything but cold truthful facts should be excluded from her education; and who invented a long and plausible story of having been half-adopted by President McKinley and his wife, who were often in New York, where she called on them in the hotel, but they were always borrowing money. Her stories grew more plausible and diversified, until at last the entire savings of the family, amounting to \$1,400, vanished. The book is timely and valuable for every teacher of literature, and all the latter should have some acquaintance with its contents.

*Home Life in Colonial Days*, by ALICE MORSE EARLE. The Macmillan Co., New York, 1899. pp. 470.

This is by far the most attractive in both matter and style of binding of any of Miss Earle's books, and also shows more careful and extensive study, and contains not far from 150 interesting and often full page illustrations, which are in every case from real articles and scenes.

Many curious old things had been forgotten, both their name and their use, but persistent research in woodshed lofts, under attic eaves, in dairy cellars, old trunks, sea chests, the stores of the Deerfield Memorial Hall, the Bostonian Society, and the American Antiquarian Society, was in many cases rewarded, and the name of many an obsolete domestic appurtenance has been won from the edge of oblivion. Some of the names for things that were a century ago in every household were contained in no dictionary, so that some good old English words and phrases have been rescued from disuse. Some of the more attractive chapters are—the homes of the colonists, the kitchen fire-side, meals, flax and wool culture, hand weaving, girls' occupations, dress, jack-knife industries, travel and taverns, Sunday and old-time flower gardens. Those who take the larger view of education will find in this book an interesting wealth of material that contributes much to vivify and extend our views of life in this country in the early days.

*Colonial Days in Old New York*, by ALICE MORSE EARLE. Chas. Scribner's Sons, New York, 1897. pp. 312.

This book might have been entitled Colonial Days in New Netherlands, for much of the life described was in the days of Dutch rule. Although it was New Netherlands for less than half a century, and the name is forgotten, Dutch influence lingered long, and is even yet

potent. The chief topics are—the life of a day, education and child life, wooing and wedding, town life, Dutch town homes, Dutch farm houses, larders, vrouws, the colonial wardrobe, holidays, amusements and sports, crimes and punishments, the church and Sunday in old New York, and death and burial.

*The School History of Worcester*, by C. VAN D. CHENOWETH, A. M. Worcester, 1899. pp. 167.

The author's purpose is to furnish in the simplest manner such historical data as every child of Worcester should know, and is of pedagogical significance as one of the first efforts in a direction which the wisest educators have long since commended, of introducing to the young the history of their own locality. A brief section on physical geography and the aborigines precedes special sections on important events, like the visit of the Apostle Eliot, the story of Digory Sergeant, Timothy Bigelow, Isaiah Thomas and John Adams, a chapter on slavery in the town; another on the churches and schools; the city during the revolution and the civil and other wars; one on historic sites and old buildings; concluding with an account of the literary life of the city. A convenient bibliography of the subject, together with a chronological table of important events is appended. About a dozen full page illustrations are introduced, and it is hoped that the work will be introduced into the schools of Worcester.

*Der Universitätsunterricht und die Erfordernisse der Gegenwart*, von ERNST BERNHEIM. Berlin, 1898. pp. 76.

This Griefswald professor enumerates the evil of present university life, and one is that one important method of reform not hitherto sufficiently emphasized is an improvement in the methods of academic instruction. His plea is that systematic "cathedra" lectures, requiring only passive receptivity should be modified, and in place of the three to six hours a week of so-called private lectures, should come first—a brief orientation course with summarized survey of the chief groups of material and references to standard works, and the remainder of the time should be devoted to active study of details by the student. Secondly, there should be practical exercises from the first semester on of from two to four hours a week where the students themselves should formulate orally and in writing, with interpretations, references, preparations, etc., their own progress, and that these exercises should be dated and inspected by the docents. This would involve not so much a radical change as more strict organization of the present semester, which should especially emphasize gradations between beginners and those more advanced. Thirdly, there should be combinations of systematic presentations with practical exercises, demonstrations, excursions, etc.

*L'Enseignement Intégral*, par ALEXIS BERTRAND. F. Alcan, Paris, 1898. pp. 313.

Integral education is no Utopia. Savants should not constitute an isolated pedantocracy, neither an intensive nor an encyclopædic culture, nor one by artificial selection of intellectual matter; but the development of all the powers and faculties of man by means of a new universality, classification and gradation of human knowledge from the didactic point of view, is our author's programme in place of a modern eclecticism which has a thoroughly dispersive method. Descartes's idea of true science is that which renders man master of nature, his ideal to be striven toward; but utilitarianism is not physical but moral, and is valuable in proportion as it develops true sociality. Comte philosophy attempted to reorganize science on the basis of

human nature and needs. The last third of the book is devoted to a criticism of modern higher and intermediate education. The school has drifted far from life, and while the great body of sciences expresses the goal of the highest and most varied human endeavors, it is not yet organized to fit the nature and needs of individuals. Till this is done the school cannot adequately represent life.

*Reform in Medical Education.* Presidential Address of American Society of Naturalists, by H. P. Bowditch, M. D., December 29, 1898.

This is a plea, by a Professor of the Harvard Medical School for twenty-seven years who has been for ten years the Dean of it, for a further introduction of the elective system in medical training. The body of medical science has outgrown the capacities of the individual brain, especially under the present limitations of time conditions. Hence it is proposed that each student should elect such special courses as may be placed upon the elective list, while certain fundamentals are required of all. To the obvious objection that such work will tend to early specialization, so that the young physician will overrate the importance of his specialty, it is answered that these evils are due to imperfect, rather than early specialization, and that since the elective system encourages thoroughness, this evil will be likely to diminish rather than to increase.

*Report of the Educational Commission of Chicago, appointed by the Mayor, Chicago, 1899.* pp. 248.

This Commission was appointed in December, 1897, because the school system was not giving "results commensurate with the generous financial resources furnished by the people." Its object was to "utilize all that is good in the present system, to discard all that is defective, and to apply new methods where needed." Eleven members, with President Harper as chairman, had many sessions, selected some two score advisors, gathered opinions far and wide, consulted literature copiously, and recommended specific legislative reforms.

It is difficult, in the space at our command, to give any adequate idea of the recommendations made by this board upon the twenty subjects considered, including boards, finance, supervision, examination, appointment, summer schools, text-books, institutes, census, building, kindergarten, etc. But we must content ourselves with saying that, as a whole, this report will take a very high place in recent educational literature, not only for specific recommendations, often many and sometimes radical, made upon each of the topics treated, but also because of the great value of the opinions gathered from the wisest experts in the country.

*The Evolution of the English House,* by SIDNEY O. ADDY. The Macmillan Co., N. Y., 1898. pp. 223.

This attractive volume is one of six that have already appeared, with six to follow, in the Social England Series edited by K. D. Cotes. Other works with more or less pedagogic interest are: *The Troubadours and Courts of Love*; *Life in an Old English Town*; *Chivalry*; *The English Manor*; *The Evolution of English Household Implements*; *Mysteries and Miracle Plays*; and *The Social Position of Woman*. The present work, which is illustrated with forty-two cuts, treats of round houses; underground houses; the simplest rectangular house and that with "outshuts;" large rectangular houses with aisles; foreign prototypes; building material; chimneys; windows and mural decorations; roofs; castle and watch towers; and the lord's house. A brief bibliography and a convenient index follow.

*Ensayos sobre Educaci3n te3rica, pr3ctica y experimental por MANUEL VALDES RODRIGURZ, Doctor en Filosofa y Letras, Director de las Escuelas de la Instituci3n "Zapata" y hoy del Instituto "San Manuel" y "San Francisco."* Habana, 1898. 2 vols. 240 and 425 pp. 8vo.

Just as the old University of Manila has not ceased its activity in the midst of the alarms of war, so in Cuba, if laws are silent, the pedagogue yet speaks, as these two interesting and instructive volumes amply testify, which are dedicated to the Havanese "Royal Economic Society of Friends of the Country." Vol. I contains the pedagogical history of the author, who became a teacher in 1871, at the age of 23 years (pp. 13-46); general remarks on the school (pp. 51-91), education (pp. 95-129), the child (pp. 133-173), and the family education of the Cuban child (pp. 175-222), etc. Vol. II treats of the teacher (pp. 5-61); advice to teachers (63-93), pedagogical psychology (pp. 95-953),—appended to which are translations of the addresses of President Schurman on "Personal Activity in Education" (pp. 155-158), and Dr. W. H. Burnham on "Child Study as the Basis of Pedagogy" (pp. 159-162), delivered at the Educational Congress at Chicago, 1893, and a *r3sum3* (pp. 163-177) of psychology as applied to education from Compayr3; a general discussion of method (pp. 179-262), supplemented by the address given at the Chicago Congress by Dr. W. T. Harris (pp. 262-271),—whom the author flatters in true Spanish fashion,—on the general problem of education; object lessons (pp. 273-241), and experimental psychology (pp. 343-387). The last is, perhaps, the most interesting section of the book, consisting, as it does, of notes and observations obtained by personal examination of some 50 children between the ages of eight and thirteen years. One interesting case is noted of a girl of nine, who was unable to read by reason of a habit of emitting sounds at hazard, with no reference to the words before her,—a defect which, although ultimately cured, had gained her almost the reputation of an idiot. Among the answers given by a class of 30 girls of about 12 years of age, to the question, what was meant by the statement (made in geography, of a certain Spanish city) "its origin is hid in the night of time" [*tiempo*, means "weather" as well as "time"], were the following: Things were spoiled in bad weather. Things were lost in the nights of time. Cities were lost in bad weather. It was much amused by the nights. There was bad weather there. They were lost in their antiquities. The winds carried away the houses. The nights were very long there. A boy of seven thought carpenters made all the wood. A boy of ten, when asked if he had seen the sky, answered "no!" but said "yes" to the inquiry whether he had seen the starry sky,—his explanation being "he had seen the sky above, but not below."

Dr. Rodriguez has said some very pertinent things concerning the French as compared with the American educational system, the gist of which is contained in the statement that the former has forgotten the mother and turned the teacher into an employee of the administration, while in America the teacher is a social institution, with woman largely in charge. Dr. Rodriguez is very friendly towards American ideas, as his citations from Channing, Draper (A. S.), Burnham, Harris (W. T.) show, and his "notes on children" are evidence that he has adopted some of the American methods, and these of the latest. Against the "education" given in the schools to-day he urges (p. 3, Vol I) that it suffers: 1. From exaggerated technicality that kills *ideas*, the basis of knowledge. 2. From superfluous and rare notions, whose sterility is not yet recognized. 3. From traditional conventionality, with which schools, teachers, and even the people are satis-

fied. 4. From the exclusiveness of memory. 5. From the inaction in which, during the whole process of instruction, the faculties of the child live. 6. From the vague character of a badly dispensed education, especially in the domain of theory. 7. From the divorce between knowledge and its practical application to the necessities of life. 8. From the supremacy of certain mechanisms, subject to an improper routine of the spiritual condition of man. 9. From the precipitation with which the work of education is finished. 10. From the lack of faith of teachers, who crawl along month after month, year after year, without method or plan, without object or aim. 11. From the hypocrisy of the "powers that be," who neither intend nor desire the action of the school. The fearful results of these factors Dr. Rodriguez had already exposed in his earlier volume, "El Problema de la Educación" (Havana, 1891), in which the condition of the school system of Cuba under Spanish rule was laid bare. How to deal with the Cuban child, "who suffers from an excess of imagination, sensitiveness and impressionability, lack of will and practical judgment" (p. 178, Vol. I), is now likely to try American genius to the full.

ALEX. F. CHAMBERLAIN.

*Child Study.* Published monthly by the Kyo-iku-Ken-Kyu-Sho, Tokio, Japan. Subscription price, 76 cents.

"Child Study" is the first publication devoted exclusively to this subject to be issued in Japan. It is edited by the Kyo-iku-Ken-Kyu-Sho (a seminary for the study of educational sciences) under the supervision of many prominent educators in Japan, among whom are Professors Matora, Takashima, Matsumoto and Tsukamoto. The monthly promises to be first-class in every respect and compares very favorably with anything of the kind published elsewhere. The material is well selected, many of the articles are original and very suggestive. The journal is divided into seven departments: (1) Editorial, (2) Original Investigations, (3) Methodology, (4) Application, (5) Department for Mothers, (6) Miscellaneous, (7) Educational Outlook.

Among the articles contained in the first three numbers are the following: The Importance of Child Study; The Moral Training of Children in the Period of Home Education; A Study on the Ideas of Children; The Development of Child Study; The Method of Child Study; Pedagogy in Normal Schools; The Development of Child Study in Japan; A Study in the Development of the Child; Children's Sense of Beauty; Women and Child Study; A Study in the Characteristics of Children; Education and Literature; Drawings of London Children.

Mr. Nakashima, in the article on The Development of Child Study in Japan, gives an interesting sketch of Japanese scholarship for some centuries past. Coming down to the new movement in Child Study, he says: "A series of lectures on Child Study was given for the first time before a gathering of Normal School teachers at Tokio, in September, 1882. In 1890, a seminary was organized by the leading scholars of Japan for the purpose of studying the educational sciences. This seminary has done much valuable work since its organization, and in November, 1898, issued the first number of 'Child Study.'

"In 1895 Mr. Kuroda was appointed to give a course of lectures in Child Study at the Tokio Higher Normal School, and shortly after a Child Study Club was organized. Articles have appeared in various magazines and newspapers on the subject of Child Study, but their volume is now so great that in addition to 'Child Study,' another monthly was started in January, 1899, called the 'Child World.' In 1898, Mr. K. Matsumoto was appointed lecturer on Child Study before

the Imperial University, and was received there with great enthusiasm." "Thus," says the writer, "Child Study becomes one of the most attractive branches of study in Japan, and many students and teachers are doing valuable work in this fascinating field." The first number contains a portrait of Dr. G. S. Hall as a frontispiece.

F. M. Y.

*Zeitschrift für Pädagogische Psychologie.* Herausgegeben von FERDINAND KEMSIES. Berlin. Herman Walther. Bi-monthly. Price, 8 Mark a year. Jan. 5, 1899. Vol. I, No. 1. pp. 56.

A new journal, the ostensible organ of the Psychological Society of Berlin, and devoted to the applications of psychology to education, comes from Germany something as a surprise. Dr. Kemsies, the editor, is best known to Americans through his excellent monograph on fatigue. The initial number of this new review opens with a readable article by the editor on some of the problems in pedagogical psychology. Child study, as he points out, although recent, is one of the sanest tendencies of psychological thought and its results must be reckoned with in the adjustment of school work to the child. There is a brief article by Jonas Cohn on some of the things to be learned from pedagogy by psychology, and an excellent article by Gutzmann on the speech of children and primitive people. Brief accounts are also given of recent meetings of the Psychological Societies in Berlin and Breslau, and a résumé of some recent child study investigations by T. Parr, of Bergen, Norway. The new journal is so much in line with the *Pedagogical Seminary*, that students of childhood in America will be glad to know of its existence.

WILL S. MONROE.

*Truth and Error, or The Science of Intellection*, by J. W. POWELL. Chicago, The Open Court Publishing Company, 1898. pp. 423.

Major Powell introduces his reader to the subject by an interesting story of primitive reasoning—"Chuar's Illusion." Now Chuar is an Indian chief. His illusion consists in thinking he can throw a stone farther along the level of a plateau than over the gulf of a canyon. The reason of this is, in Chuar's mind, that hollow or empty space pulls the stone down. And Chuar further illustrates his theory of gravity by the assertion that "the higher you reach" in climbing a tree, "the harder the pull; if you are at the very top of a tall pine tree you must cling with all your might lest the void below pull you off."

Chuar, according to Major Powell, is the typical philosopher. Like him, Hegel and Spencer "had reified void and founded a philosophy thereon."

Major Powell seeks to found a new philosophy, not upon "reified void," as he fondly believes, but upon the inductible foundations of ultimate and assured scientific verities—a philosophy which is "neither Idealism nor Materialism;" he "would fain call it the Philosophy of Science."

These foundations he thinks he has found in the "four great doctrines of modern science:" "the atomic theory that the constitution of bodies of bodies is explained as a numerical combination of ultimate smaller particles;" "the modern doctrine of morphology, that forms in different kinds of bodies exhibit homologies that express degrees of relationship;" "the modern doctrine of the persistence of motion as the proper explanation of the correlation of forces;" and "the modern doctrine of evolution, that higher bodies are derived from lower." He avows his purpose of embracing these doctrines "in all their logical results, some of which may seem strange" to the reader. He propounds the "hypothesis that consciousness inheres in the ultimate particle," that "every particle of matter has consciousness," and at-



tempts to show that this assumption "harmonizes the principles of psychology."

Starting with these assumptions, Major Powell elaborates one of the most intricate and confusing fabrics of epistemology ever constructed. The difficulty of understanding his essentially difficult system is enhanced by the fact that he has coined (and recoinced) a new philosophical terminology. The work is a monument to the insatiable desire that is in man to reduce the universe to conscious forms. In spite of the author's somewhat illiberal castigation of the "metaphysicans" and "mystic philosophers," and his constant assurance that he is strictly within the limits of science, one cannot lay the ghost of a suspicion that the glorious company of Hegel, Spencer and Chuar has received an accession.

W. S. S.

*Anglo-Saxon Superiority; To What it is Due*, by EDMOND DEMOLINS. New York, 1898. pp.

This French author here describes the "extraordinary power of expansion of that race, which seems destined to succeed the Roman Empire in the government of the world." It is divided into three parts: I. The Frenchman and Anglo-Saxon at school; in which he asks successively whether the French, German and English school system forms men and how to bring up our children; II. The Frenchman and Anglo-Saxon in private life; in which he urges that the French mode of education reduces the birth rate and compromises the financial condition, while the Anglo-Saxon method prepares for the struggle of life; III. The French and Anglo-Saxon in public life; where he attempts to explain why the Anglo-Saxons are more hostile to socialism than the German or Frenchman; how the fatherland is conceived by each nation: what social state is most conducive to happiness; and the present systems of social regeneration.

*The Cocoa Palm and Other Songs for Children*. Words and music by MARY DILLINGHAM FREAR. Chicago and San Francisco.

This is one of the most unique books we have had for a long time. It is by a recent Wellesley graduate, who has learned to love nature in Hawaii, and seeks to infect children with the same love. The mango, the kiawe and the hola tree, the waikiki or hurrying water, the leis or wreaths, the song of the rice, taro plant, the anku or fisher bird, the sunflower, the lizard, roommate, give an eastern tropical air; and the nearly one hundred songs are grouped as those of babies, birds, animals, flowers, trees, rice, the sea, holidays, sleep, action or games, prayer and thought. The book is prettily illustrated, and the centipede, crab, cricket, fish, mynah, bird, spider, lily, sea shells, peanut boat, and all the rest are well calculated to interest children as well as to instruct them, and what is better yet, to give their sentiments a direction natureward.

*Report of the Departmental Committee of Defective and Epileptic Children*. Parliamentary Blue Book Report. London, 1898.

The best part of this book is the sections on the organism and staffing of special classes, their size, mixture of sexes, teachers' qualifications, subjects of instruction, manuals of exercise and punishment, and inspection. Many legal points are also discussed. It is recommended that teachers be trained to make special observations upon these children, to guide their treatment of them, and that Sloyd, laundry, cooking and dress cutting be introduced in the training of such teachers. Their needs are not met by the ordinary training college, but these teachers should have had some experience in ordinary schools. Mixed classes are common and are recommended, although

on the continent they are mixed at none of these schools. The practice of pupil teaching is thought to be impracticable.

*Introduction to the Herbartian Principles of Teaching*, by CATHERINE I. DODD. London, 1898. pp. 198.

A teacher in the day department of Owen's College, Manchester, here undertakes to sketch simply some of Herbart's ideas and to apply them to primary schools. She believes that the sun of Herbart is rising in England, and that she is beginning to atone for past neglect of theory. In the two-page introduction by Professor W. Rein, it is stated that by studying such principles the best natural gifts of the teacher can be improved; that the highest aim of education is not to cram knowledge but to awaken faculties to activity; to form the judgment and to quicken the life. Herbart's views are grouped with a few pictorial illustrations as follows:—aim and principles of education, interest, experience, intercourse, selection determined by culture epochs, humanistic studies, natural science, association, concentration, formal steps, historic account of the growth of Herbartian influence in Germany. A bibliography is appended.

*Curious Punishments of Bygone Days*, by ALICE MORSE EARLE. Chicago, 1896. pp. 149.

This attractive little volume consists of very readable chapters based on original studies, each introduced by an ancient woodcut, on the bilboes, the ducking stool, stocks, pillory, punishment of authors and books, the whipping post, the scarlet letter, branks and gags, public penance, military punishment, branding and maiming. The author well says her subject is not a pleasant one, but often has a humorous interest, and that a punishment which is obsolete gains an interest and indignity from the antiquity of its history, and becomes endurable because it has a past and no future. Her book, like that of an old writer, is dedicated to all curious and ingenious gentlemen and gentle women who can gain from acts of the past in the present days of virtue, wisdom, and the humanities.

*The Method of Teaching Modern Languages in Germany*, by MARY BREBNER, M. A. London, 1898. pp. 71.

Miss Brebner was the Gilchrist Travelling Scholar in 1897, receiving the fifty pounds annually awarded by the Cambridge Training School. She spent six months in the schools of twelve leading German cities, inspecting forty-one schools and hearing 268 lessons. The new method is summed up as follows:—reading as the center; grammar taught inductively; foreign languages used as much as possible throughout; regular daily conversations; teaching connected with the daily life; objects and pictures used in early stages; great attention paid to pronunciation throughout, but especially at the beginning; free composition in place of translation into the foreign tongue, and a minimum of translation into the mother tongue. The most interesting chapters are—the preparation of the modern language teacher in Germany; the discussion of the methods of Gouin, Haeusser and Berlitz.

*Psychologische Untersuchungen über das Lesen*, von B. ERDMANN und R. DODGE. Halle a. S., 1898. pp. 360.

This valuable and comprehensive work begins with thirty-four pages of digest of previous studies by Aubert, Helmholtz, Baxst, Cattell, Sanford, Grasher, Weinike, Goldscheider and Müller. The first chapter considers rest and motion of the eye in reading with various time measurements. The second chapter is devoted to studies of the field of view in reading and the fixation point. Then follows the de-

scription of the apparatus for experimental isolation of pauses and fields; studies of the minimal time of exposure, the time of reading later groups or disconnected words; recognition of words as affected by field and distance; the recognition of connected words; spoken words and script; the psychological presuppositions for determining the purely psychic matter; the angular rapidity of movement in reading, with descriptions of apparatus.

*Child Study Research in Public School, No. 13.* Report on the Vacation Schools and Playgrounds of New York City, Boroughs of Manhattan and Bronx, 1898. pp. 51-97.

This work is of a somewhat preliminary nature, and was carried on by Messrs. Partridge and Curtis, of Clark University, in August, 1898, under the direction of Superintendent Stewart, upon children taken from vacation schools and playgrounds. The endeavor was to study the average child of that particular district, and 200 children from eight to fifteen, nearly all Jewish, were measured and tested by the dynamometer, spirometer and Snellen cards for vision. The purpose was essentially practical, and was well calculated to fulfill its purpose of demonstrating the importance of such determinations. Appended are a syllabus considering the utility of playgrounds and illustrations of several forms of apparatus.

*A Short History of Germany*, by MARY P. PARMELE. Chas. Scribner's Sons, New York, 1898. pp. 179.

It is assumed that to know the forces that have created a great nation and the steps of its unfoldment is more important than to know the many events and incidents which attended such growth. The effort throughout is to keep strictly in the main line of development and resist the temptation of introducing details however fascinating they may be. The history comes down to the advent of the present emperor.

*Flashlights on Nature*, by GRANT ALLEN. Illustrated by Fred Enock. New York, 1898. pp. 312.

This is one of the most charming nature books of recent years, and that is saying a great deal considering their numbers. The general topics are—the cows that ants milk, the plant that melts ice, beasts of prey, a woodland tragedy, marriage among the clovers, horned earwigs, the first paper maker, abiding cities, a frozen world, British bloodsuckers, a very intelligent plant, a foreign invasion of England. The illustrations, considerably over one hundred in number, are unusually fine, and the cover is a very thin section of unpolished wood.

*Extemporaneous Oratory for Professional and Amateur Speakers*, by JAMES M. BUCKLEY. New York, 1898. pp. 480.

This book is quite out of the ordinary, and by a man who has read and thought widely, can utilize Delsarte without absurdity, and write sanely of the exalted states of mind characterized by more or less intelligence, often seen in ecstatic trance speakers, and is enlivened throughout by incidents which show a very wide reading of the lives and peculiarities of great speakers. There are points in it that suggest the good old Roman day when oratory included morality and politics, and was relatively free of many of the technicalities that are found in the many more recent treatises. We are told that there are no cast iron rules and no principles that an extemporaneous speaker may not sometime have to violate. Every one must be his own final authority.

*Aristotle on Youth and Old Age, Life, Death and Respiration.*  
Translated by W. Ogle. London, 1897. pp. 135.

This work has been translated before, and is thought to be the last treatise of Aristotle on the phenomena of animal life. The text is somewhat marred and corrupted, and is marked by more or less iteration and confusion. The author has tried to make it intelligible by using his thorough acquaintance with the different texts and readings, and explains his more important constructions in copious notes. Sixty pages of the work consist of a valuable and interesting introductory.

*L'Enfant et L'Adolescent dans la société moderne,* par LOUIS DEFERT.  
Paris, 1898. pp. 221.

We have here a popular work devoted chiefly to infancy, with chapters entitled—before birth, birth, mortality, the first days, the nurse, the cradle, the school, protection, moral and physical, infant labor, and the duties of childhood. It makes no attempt to completeness or detail, but rather to concise indication of children and youth in modern French society, with a résumé of laws and medical treatment of sick children. The author maintains absolute neutrality so far as opinions are concerned, but seeks only to present facts. The latter part of the book contains lists of French societies for the aid of abandoned infants, lying-in hospitals, and those for children, societies organized in their interests, and those to rescue adolescent boys and girls.

*Die Behandlung stammelnder und stotternder Schüler,* von ROBERT MUTKE. Breslau, 1898. pp. 30.

The author is director of the curative course of the Breslau Institution for stuttering children, and his work contains a wall chart for practice. The best part of this pamphlet relates to the pedagogic and didactic treatment of stammerers who relapse after having taken some previous course, and consists largely in more or less scientific explanation of the necessity of observing certain few inflexible rules, such as sitting erect; reflecting before speaking; slow, loud and clear articulation; taking a short, deep breath beforehand; beginning the open vowels very lightly; speaking the base vowels prolonged; directing the breath upon the vowels rather than the consonants. These rules are enforced by a few simple, special signs.

*Die Methusalems der Vorzeit und der Gegenwart,* von A. DAUL.  
Würzburg, 1898. pp. 112.

The author, who announces himself as seventy-seven years old and for fifty years active as journalist and writer, collects lists of soldiers, statesmen, learned men, poets, painters, reformers, discoverers, etc., and finds that seventeen per cent. of all of these men reached the age of eighty, inferring that ability and longevity go together; and proceeds to give rules for prolonging life, prominent among which is normal brain hygiene and activity. He then proceeds to discuss various foods and common slight ailments, with an appendix containing a score or more of recipes for cooking according to Father Kenipp.

*Die Geistige Ueberanstrengung des Kindes,* von BÉLA SZENTESY.  
Budapest, 1898. pp. 123.

The first part is a general characterization of childhood from the cradle to the intermediate school, with special reference to brain activity and instinct, and some characterization of the kindergarten and volksschule. The second part, entitled *The Psychophysics of Making Music*, describes the author's theory of playing the piano. We must confess that the title of this booklet was to us very misleading. The

first part is more crude than elementary, and the second part is devoted to describing, in terms very unnecessarily scientific, the commonest rules for learning to play the piano, with the special intimation throughout that other methods are peculiarly liable to cause undue fatigue and all the evils of precocity.

*How Music Developed*, by J. W. HENDERSON. New York, 1898. pp. 413.

The author here attempts a brief, critical, explanatory account of the growth of modern music from its beginning to the progress and simplification of popular music, the evolution and use of the piano, and of classic and dramatic orchestrations, the development of chamber music and the oratorio, opera and musical drama, with special sections on Handel, Bach, Haydn, Mendelssohn, Gluck, Mozart, Beethoven and Wagner. The author has a broad knowledge of his subject, and holds that those who know something of its history will best be able to both understand and to enjoy it.

*Der Scheintod der Neugeborenen*, von DR. LUDWIG KNAPP. Wien und Leipzig, 1898. pp. 163.

The author holds to some extent with Goethe that the history of science is science itself, so that this first installment of his comprehensive work is entirely devoted to the history of the apparent death of newborn children regarded both clinically and judiciously. The development of the various methods of reanimation is the most copiously treated topic, and thirteen pages of bibliography are appended. Nine woodcuts illustrate processes and instruments.

*Nature Songs and Stories*, by HARRIET M. MILLS and ELSIE A. MERRIMAN. Columbus, O. pp. 75.

There are fifty-two stories, each introduced by a song and arranged as songs for autumn, winter, spring, prayers, hymns, and miscellaneous songs. The stories are by Miss Mills, and seem to show unusual capacity and very successful experience in reaching children's interests. The music, by Miss Merriman, is simple and tuneful. Altogether it is an interesting and valuable addition to the literature of the kindergarten by sympathetic teachers, who are too intelligent to be servilely bound down to the ultra orthodox influences that are now threatening the future of the kindergarten.

*L'Évolution de L'Éducation*, par CH. LETOURNEAU. Paris, 1898. pp. 617.

This work has a most attractive title, and was awaited with great interest, but read with growing disappointment. His definition is broad, and the first chapter on education in the animal kingdom; the second on Melanesia; the subsequent chapters on education among the African negroes and in Polynesia, the American Indians, Mexicans and Peruvians, constitute the chief merit of the work. The later chapters on education in China, Egypt, Arabia, Judea, India, Persia, Athens, Sparta, Rome, mediæval and modern times, are little more than digests of current histories of education. The book ends with a sad section on the demoralization of money, the decalogue of the dollar, and utilitarianism.

*Japanese Fairy Tales*. Published by T. HASEGAWA, Tokyo.

These twenty booklets are as purely and beautifully Japanese as anything can well be conceived. The finest double-fold rice paper with colored pictures on every page, exceedingly attractive and varied styles of illustrations on the cover, tasteful silk thread binding and extreme cheapness are the chief features. The stories are all trans-

lated into good and simple English, and there is hardly a sign of Japanese script in the whole. Together they constitute the Kobunsha Japanese Fairy Tale Series, and seem to be well calculated to have an unique fascination for children.

*Kolleg und Honorar*, von DR. E. HORN. München, 1897. pp. 158.

After discussing the political and scientific character of the German University since the sixteenth century, the decline of public and the growth of private lecture courses; the statutes and regulations for fifteen of the leading universities are presented and discussed with some detail in order to show how far the constant cry, more freedom, more money, is justified. The author believes that professors should be more or less freed from the necessity of lecturing and given better pay.

*A Short History of France*, by MARY P. PARMELE. Chas. Scribner's Sons, New York, 1898. pp. 112.

This is an attempt to tell the story of a great nation in about 100 pages, and is, of course, marked by rigid exclusion of all save essentials. To those familiar with the subject it is merely a reminder of sequence and events, while to the beginner it may serve as a framework.

*Recueil des Lois et Règlements sur l'Enseignement Supérieur*, par AUGUSTE GÉNÈRÈS. Paris, 1898. pp. 1,010.

This ponderous fifth volume reports on the condition, laws and decisions regulating intermediate education during the decade ending May, 1898, with a table giving dates and digests of all legislation. It contains, unfortunately, no summary of general results or tendencies, but is simply a law book.

*The Meaning of Education, and other Essays and Addresses*, by NICHOLAS MURRAY BUTLER. The Macmillan Co., New York, 1898. pp. 230.

The above title is the first of seven papers, the other titles of which are—what knowledge is of most worth; is there a new education; democracy and education; the American college and the American university; the function of the secondary school; the reform of secondary education in the United States. These papers are clear, sensible and progressive. The author's standpoint throughout is essentially practical and American. He is, to our thinking, on the right side of nearly all the great questions in which he takes an interest. While the work is not marked by any great effort on the author's part to be a specialist in any of the topics selected, the best and most useful papers are the two last, which deal with secondary education. The author has restrained some of the unfortunate prejudices and animosities that sometimes find expression in his journal, and appears here at his best, and we believe his true character, not as a pre-eminent scholar or an original thinker, but as a vigorous mind chiefly interested in the practical side of education, and save only for his excessive and ostentatious discipleship to his hero and ideal,—the president of Harvard College,—independent. Educational intelligence and sanity in those educational fields in which his interests lie are the pre-eminent notes of this welcome book.

*Application of Psychology to the Science of Education*, by JOHANN F. HERBART. Translated and edited by Beatrice C. Mulliner. With a preface by Dorothea Beale. London, 1898. pp. 231.

Miss Beale is the accomplished principal, and Miss Mulliner a lecturer at the Ladies' College, Cheltenham. The former holds that the two legacies we chiefly owe to Herbart, which explain the secret of the

strange fascination he exercises on educational thinkers to-day, are—first, clearer views on the doctrine of apperception, insistence on the unity of the soul, and deprecation of all one-sided development which mars the completeness of character. To understand Herbart we have to transport ourselves into a different thought world, to conceive ideas as active powers of the ego as constantly building itself up afresh and giving birth to entified concepts. His physico-mathematical conception of ideas attracting, colliding with and suppressing each other, seems like a world of ancient ghosts, or else we must conceive his terminology as the language of poetry. The comments of Miss Mulliner will add materially to the usefulness of the book, as do the analyses that precede each of the thirty-five lectures. A glossary of some fifty characteristic terms and their translation, together with a good subject index, add to the value of the work.

*Fraudulent Diplomas*, by HENRY W. ROGERS. Chicago, 1899. pp. 18.

A committee of the college section of the Illinois State Teachers' Association was appointed to consider this question, and this is the report of its president. The State of Illinois appears to have been a glaring example of this kind of fraud. Five Chicago institutions are named which it is claimed are not recognized by reputable schools of dentistry. The address closes with a recommendation of the committee that an educational commission of not less than six be constituted by law in each State and appointed by the governor. Its members should not be upon any academic board, and should hold office for six years, and that all institutions shall derive their degree conferring power from this board. It can withdraw this power if the necessary conditions are not met, and any institution that fails to recognize this authority shall forfeit its right to exist.

*Grundzüge der psychologischen Erziehungslehre*, von DR. A. HUTHER. Berlin, 1898. pp. 169.

In the first part the author attempts an analysis of the building of ethical character, the first step of which is naïve and the second reflective morality, and undertakes to describe the development of conduct according to conscious principles. The second part presents the outline of a psychological theory of education, and begins at the familiar Herbartian distinction of government and discipline. The former includes personal direction and material installation, watchfulness and compulsion to rules. The second describes the discipline of restraint, that of determination methods of developing moral reflection, both analytic and synthetic; while the supplement is devoted to the psychology of formal and material characterology.

*Die Welt im Munde*, von MAX VOIGT ALY. Frankfurt a. M., 1898. pp. 87.

The world in the mouth proves to be the teeth, and the dentist author here undertakes a series of popular "chats" upon the relation between the teeth and the mouth. The chapters treat caries; give practical rules for the care of teeth and mouth; describes normal teeth; illustrate by cuts and otherwise the structure of the teeth; explain sore mouth and describe governmental dental hygiene. On the whole the pamphlet is well and interestingly written.

*The Plan of an Ethical Sunday School*, by W. L. SHELDON. Philadelphia, 1898. pp. 115-182.

The author is lecturer of the Ethical Society of St. Louis, and the foundation of his school is a short catechism or responsive exercise which recites simple duties and homely truths. Picture talks are

varied by musical services, and many brief gems of wisdom are gleaned from the best literature of the world. Sometimes recitations, reading of a short story, short talks on objective and moral inspiring themes, Bible stories told as such, etc. At the age of nine the work becomes systematic and is often devoted to habits, one after another, such as exaggeration, economy, conceit, laziness, swearing, procrastination, teasing, cheating, obedience and sickness. The home is studied, and various festivals, Sunday, Thanksgiving, memorial days like Easter, animal families. At eleven or twelve there is a break, and the life of Jesus is introduced with the miracle side omitted. Citizenship, patriotism, soldiering, crime, etc., follow. Finally come duties to self and others, moods, pleasure, will, and then after introductory talks about religion, the Bibles of the great races are taken up, and the history of religion from fetishism onward is studied.

*Psychologische Analyse der Thatsache der Selbsterziehung*, von DR. PHIL. G. CORDES. Berlin, 1898. pp. 54.

This is one of a collection of treatises of pedagogical psychology and physiology in the field of education, edited in Berlin by Schiller and Ziehen. The points which the author treats most fully are—the hour plan, practical application of speech physiology to beginners in reading character and will building on psycho-physiological grounds, instruction and fatigue, memory and association of ideas. To educate self one must know his own peculiarities; recall the events of his life; reflect on his personal disposition; know something about concepts and their comparison, motives, etc. Then this must be applied to intellect, feeling and will.

*Schulhygienische Fragen und Mitteilungen*, von DR. B. SCHWALBE. Berlin, 1898. pp. 37.

This is an interesting illustration of the habit of some gymnasiums to insert a piece of solid work in their annual report. The writer here presents lists of the many measurements of health, determinations of height and weight used in his institution. Such careful determinations with the laboratory of the institution which is well equipped, the habit of discussing heat, water, food, air, bacteria, etc., with reference to the individual pupil's own body, tends to make parents trust teachers more and give way to their advice.

*Bibliography of School Hygiene*, by WILLIAM H. BURNHAM, Ph. D., Clark University.

The author has for years given special attention to this subject, and is perhaps now our best expert. In this reprint from the Proceedings of the N. E. A., 1898, he has collected 436 titles of books and articles upon the subject with references to supplementary and more special bibliographies.

*The History of Compulsory Education in New England*, by JOHN W. PERRIN. Meadville, Pa., 1896. pp. 71.

This doctor's thesis at the University of Chicago, after a brief introductory chapter on the origin and progress of compulsory and universal education in the sixteenth century, describes compulsion in New England from 1620 to 1800; indirect compulsion and factory laws of Massachusetts and Connecticut; and the truancy law in Massachusetts.

*The Public School Mental Arithmetic*, by J. A. McLELLAN and A. F. AMES. New York, the Macmillan Co., 1899. pp. xii, 138. Price, \$0.25.

This little book, by the authors of the "Public School Arithmetic," is founded on McLellan and Dewey's recent work, "The Psychology



of Number." Over 1,000 examples, graded in order of difficulty, are presented, and a 5-page appendix furnishes the necessary "tables." The leading ideas are that number is the tool of measurement, the latter taking its rise in human activity satisfying human needs; that imagination should be appealed to, not less than reasoning; that the idea of balance or equation, present in every arithmetical problem, should be emphasized from the outset. E. B. T.

*Juvenile Offenders.* A Report based on an Inquiry Instituted by the Committee of the Howard Association, 1898. pp. 39. 8vo. Published by Westheimer, Lea & Co., London. Price four pence.

The inquiry was sent out to magistrates and others who have had most experience in dealing with juvenile offenders in England, asking what, in their judgment, was the best means for dealing with children who break the laws. The replies are published in full, and there is a scrappy and unsatisfactory summary. The opinions are almost universally opposed to imprisonment and in favor of whipping.

EARL BARNES.

# THE PEDAGOGICAL SEMINARY.

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## EDITORIAL.

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This number of the *Pedagogical Seminary* is chiefly devoted to Child Study. The first article, although primarily a general study of the development of a universal human interest, is based largely on reports concerning children's ideas of the soul and immortality. Dr. Street finds indication from his study that the belief in immortality is not an innate idea, but rather that there is in the child a predisposition upon which with suitable environment this belief may be grafted, and he offers some suggestions upon the perplexing problem of religious pedagogy.

Mr. Crosswell whose study of the amusements of two thousand children should be read in connection with the recent studies by Groos (*Die Spiele der Thiere and die Spiele der Menschen*), by Culin (especially *Street Games of Boys in Brooklyn*, *Journal of American Folklore*, July, Sept., 1891), and by Gulick (*Pop. Sci. Mo.*, Oct., 1898; and *Pedagogical Seminary*, Vol. VI, pp. 135-150), finds results that corroborate Dr. Gulick's view that a predominant characteristic of the games of early adolescence is the co-operation of a number to secure a definite end and the delight in contest in contrast with the individualistic amusements of earlier years. He contributes data, also, to the problem of variation in play as conditioned by

sex, nationality, locality, and season, and makes important pedagogical suggestions. In the survey of Child Study in Europe, Mr. Monroe notes the important foreign, especially the Italian, contributions to the subject, and gives a vivid idea of the extent of the movement. Mr. Wilson's Bibliography of 333 titles is an index of the general activity in this field for the year 1898. In a few cases where important books published previous to 1898 were omitted from the general Bibliography (*Pedagogical Seminary*, Vol. V, pp. 541-589), they are mentioned in the present list.

Dr. Arnold's "Bacteriological Study of School Utensils," which with the book reviews, completes the number, calls attention anew to an important chapter in the modern doctrine of hygiene and cleanliness, and shows the danger that may result from the promiscuous use of pencils, penholders, crayon, and the like.

There are indications that the period of hasty conclusions in Child Study is passing and that the stage of concrete inductive study of definite problems is coming. While in some localities the movement is still in danger from its friends, it is encouraging that it commands the interest and co-operation of men like Clouston, Geddes, Lloyd Morgan, Shuttleworth, Sully, Binet, Mosso, Sergi, Groos, and Trüper. (See pp. 373 seq.) The work already done has opened scores of new problems in the physiology and psychology of development, and the real breadth and significance of the field is appearing. The co-operation of many investigators is needed in studying definite points with large numbers of children, in more extended studies of individuals, in studies of defectives, and of the health of children as affected by the varying conditions of school life, as well as the more directly practical studies for the sake of the teacher.

## A GENETIC STUDY OF IMMORTALITY.

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Gone forever! Ever? No—for since our dying race began,  
Ever, ever, and forever was the leading light of man.  
—*Tennyson.—Locksley Hall. 60 years after.*

Immortality is not a doctrine of the schools, but a faith of humanity, not based upon metaphysic, nor proved by the logic of a given system of thought, but the utterance of an instinct common to the race, which has made itself heard wherever man has advanced from a religion of nature to a religion of Faith. Philosophy, however, has made it one of her tenets, so that God, soul, and immortality become inseparably intertwined, and since the days of Plato, every writer, who has essayed to construct a cosmological theory, has had to deal with these three concepts, either making God the life and source and the final goal of all created existences, or with a blow of thought killing the Deity and hypothesizing all cosmic existence as mechanical, and man as the supreme automaton. Between these two extremes lie numerous diversities of thought.

It is not in the light of philosophy, nor metaphysics, that the problem shall interest us, but from the standpoint of modern science, and especially that of genetic psychology. Since earliest times the mind of man has occupied itself with the immortality of the soul. In regard to this, we can distinguish two movements, one speculative, and one empirical. The first assumes a substrate for the psychical phenomena, and seeks to prove the immortality of the same; in the second, science methods take possession of the psychological investigation, in order to describe the mental phenomena, and lead them back to their simplest forms, and discover their fundamental laws. Psychology and metaphysics have dissolved partnership.

The doctrine of a natural, progressive development is now applied to every problem of life, and it is the purpose of this paper to submit this subject to the same treatment. That faith in a personal consciousness after death has diminished among certain classes of mankind, is evident to even the most casual student of humanity: that it has declined among the great masses, is by no means so certain. Primitive man, childhood, womanhood, and the majority of the thinkers and workers cling as tenaciously as ever to the faith and traditions of the ages. There is, however, a body of thinkers who form the human pseudopodia, as it were, reaching out after and grasping the

new, among whom there are flagellate movements, pendular oscillations, rhythmic flows of thought, while the great body is as calm and steadfast as the deep waters of the mighty seas.

The origin of this state of unrest is not far to seek. It is doubtless largely due to: 1st, that cheap conception of life which a shallow knowledge of scientific thought has produced; 2d, that spirit of personal freedom that vaunts itself in open rebellion against all traditional instruction; that looks upon belief in God, soul, and immortality as a relic of dogmatism and therefore to be distrusted, if not despised; that glows in its own hatred of dogmatism, while its own deductions belong to the same school of thought, only representing the negative; 3rd, that disposition to accept as final the verdict of one department of knowledge without a thorough investigation in the light of all truth; present findings are greedily accepted without any effort to discover their historical settings or prophetic significance; 4th, those mental predispositions that are engendered by long and continued investigation of one field of reality, and especially the materialistic researches of science, which tend to destroy idealistic conceptions; 5th, that wantonness that has followed the emancipation of scientific thought; 6th, that spirit of antagonism that is supposed to exist between metaphysical philosophy and religion, and the modern physical sciences; 7th, the assumption that because certain interpretations of reality have been found untenable, therefore the reality itself must be non-existent.

The intensity and vigor and deep significance of the doctrine of immortality is shown in the vast literature that deals with the subject. Prof. Ezra Abbott published several years ago a bibliography on this theme, which contains no fewer than 4,977 titles. I myself have collected nearly a thousand additional titles and have by no means exhausted the list. Every year witnesses the publication of a score or more of books or pamphlets discussing some phase of the topic, and every easter-tide floods the earth with pulpit orations, which the press scatters broadcast. Science has not directly investigated immortality because it lies largely outside of its sphere of activity. Its office is the correlation and codification of experience, and it is helpless without the data which experience furnishes. Immortality lies beyond phenomena, and until science can demonstrate that the mental can subsist apart from the phenomena, or the reverse, that with the disorganization of the organism all mentality ceases, it cannot be said to have given any definite utterance on the question.

As this matter will be more fully discussed later on, no more need be said here. With these preliminary thoughts we may now turn to the close investigation of the subject itself, not

with the hope of definite proof, or disproof, but of more rational and clarified conception of the same.

## CHAPTER I.

### THE GENETIC SOURCE.

The question of origin of the hope for future life is wrapt in profound mystery. Its genesis long antedates the earliest historic record of man as man. Push the investigation as far back as possible, we find man always and everywhere has had a sense of his immortality. The oldest record, however, is but as yesterday in comparison with the thousands of years man has been an inhabitant of the earth, and if Spencer's dictum, "acquired in the race, inherited in the individual" be true, then this early historic man is physically and psychically the resultant of antecedent forces. The most primitive mind known to-day has long journeyed on the road to civilization. If, however, we are to be governed by empirical facts, we are forced to entirely overlook, or at least foreshorten this unknown, unfathomable past, and accept, as the primitive type, man as he is known to history. With this qualification, then, the statement may be made that a belief in continued personal existence after death seems to be an original endowment of humankind and not any *parvenu*. Stated in philosophic terms this is the old familiar doctrine of "*innate ideas*." In modern times it finds its justification in the fruits of introspection, which lead the untrained to infer that faiths, for which they can give no adequate genetic analysis, form an inherent factor of the soul itself. Special emphasis is laid upon what has been termed the "religious nature of man," and this has been designated an instinct of the soul. Sense of dependence, sense of brightness, God, soul itself, and immortality, all find their place here, together with the *a priori* ideas of time, space, and causality (Kant: Critique of Pure Reason), and sense of the infinite (Max Müller: Origin and Growth of Religion), and the theological sense of sin (Kellogg: Genesis and Growth of Religion). These tap roots, around which have gathered all the accretions of the senses, have produced the magnificent growth of modern faith. In justification of this theory its supporters point to the intensely significant fact that man everywhere has faith in continued existence (Dr. Brinton: Myths of the New World), and associate it with some Supreme Being who either conditions it, or acts as an artist in determining the soul's destiny in the land of spirits.

As a theory this will explain as large a body of facts as perhaps any other. It has been successful in maintaining its position in philosophic thoughts, though charged time and again

by the battalions of sensationalism. It is so out of harmony with the lines of development of all the other departments of human experience that one should accept it only as a last resort.

On the basis of this theory one should expect to find the early manifestation of the instincts of God, soul, and immortality. In order to put the matter to a scientific test the following study of children, adults, deaf mutes, and lapsed man, was made, of the first three, empirically, and the last, from literature.

Of the 25 children personally studied, none had any adequate conception of death, still less of the soul and of God. Of course they had been taught most religiously by their parents and sabbath school teachers, but this had failed to impress their young minds other than that "there was a being somewhere whose *name* is God." They said their prayers to papa, or mamma, and had no idea that they formed any relation whatever to such a being. They were fast learning such, but it was wholly an extraneous affair, a matter of the head and not of the deep "inner" nature. Being but eight years of age, perhaps they were too immature to have any due appreciation of a mysterious inner force that was leading them to the realization that they held vital connection with the Godhead, yet one might naturally expect some manifestation of this instinct of the soul did such exist. It is very interesting and suggestive to note that they had no suspicion that their own existence would ever cease. It seems, then, that *man has to learn his mortality rather than his immortality*. This same fact came out clearly with the deaf mutes. With the exception of a few cases where a death had occurred in the home, these children did not have the least inkling of its significance. Their dolls died, as did their toy animals, but this meant little more than sleep to them. Dr. A. C. Ellis and President G. Stanley Hall found that with a somewhat older class of children, that doll-death was chiefly make-believe, as they soon exhumed their buried pet to see whether it had gone to heaven. (*Pedagogical Seminary*, Vol. IV, No. 2.) It is interesting to note that many of these same children fully expected their dolls to go to heaven sawdust and all. In the reminiscences to be introduced later a few report that they used to fancy heaven filled with dolls, and one girl says she had a definite number. All of the 25 children thought that if they were to die they would go to heaven just as they are. It meant no more to them than going to New York would mean to a Boston child.

#### DEAF MUTES.

The pathological cases of humanity are shedding a vast flood of light upon mental activity, and it occurred to me, that the

great experiment that nature is carrying on in our midst by depriving some of speech and hearing, might reveal some of the mysteries of soul activity. It was found that Dr. Harvey P. Peet had already, in 1854, done pioneer work, and had executed it so thoroughly that all that had to be done was to discover whether anything new had since been disclosed. The Doctor wished to test the theory of the spontaneous growth of (a) language, and (b) of religious ideas. The method of procedure was the questionnaire method. Certain questions were propounded to the three advanced classes of the New York Institution, and afterwards to thousands of similarly afflicted mortals.

Question I. Had you, before instruction, any idea of a God, or of any being in the sky, more wise and powerful than man? . . . . The answers to this were almost uniform in disavowing any such idea. Two or three specimen replies are: (1) "I knew nothing of God." (2) "Before I was instructed I had no idea of God, but I thought that some one caused the thunder and lightning over the earth, which quaked." (3) I had but an imperfect idea of God originally imprinted on my mind by my mother through signs."

Dr. Peet's conclusion is: "Thousands of deaf mutes in Europe and America have been questioned, and their answers have been perfectly uniform in the point, that no one of them ever originated the idea of a Creator and Governor of the world from his own unaided reflection."

A second question ran: Had you any idea that the world was created? that some wise and powerful being had made plants, animals, men, and all things? This was also answered in the negative, but there were found many replies which showed that the mind was striving after a cosmogony.

Another question asked: Had you any idea of the existence of the soul as something distinct from the body and which might be separated from it? The prevailing answer was "No, Sir! I had no idea of the soul."

Question IV. What were your thoughts and feelings on the subject of death? Did you know that you must yourself die? The replies showed death to be the king of terrors to those mutes who had been brought into contact with it. The great majority never associated it with their own bodies.

Question V. Were you ever led by dreaming of a deceased person to suppose that that person, though dead and buried, still lived? The general reply showed recollection of no such dream.

Other questions were put but they do not directly concern us.

Dr. Peet's general conclusion runs: To the same purport as the foregoing on all the points we have considered, is the



testimony of many other deaf mutes in Europe as in America. Nor have we ever heard of any well authenticated case of a deaf mute, who gained any correct ideas on religious subjects by his own unaided powers of observation and reflection. We feel authorized by the evidence before us to deny that any deaf mute has ever given evidence of having any innate, or self originating ideas of a Supreme Being, to whom love and obedience were one, of a creator, or a superintending providence, of spiritual existences, or of a future state of rewards and punishments.

Thomas H. Gallaudet says: "I do not think it possible to produce the instance of a deaf mute from birth, who, without instruction on the subject from some friend, or at some institution for his benefit, has originated from his own reflections the idea of a creator and moral governor of the world, or who has formed any notions of the immateriality and immortality of his own soul." (22nd Annual Report of the American Asylum.) W. W. Turner, of the American Asylum, and A. B. Hutton, then Principal of the Philadelphia Institution, bear similar testimony. (22nd Report of American Asylum.)

M. Berthier, himself a deaf mute, says: "Without instruction a mute will never have a notion even vague and confused of a superior existence, whom it is his duty to love and obey, and to whom he must give an account of his thought and actions. (Abbé Montaigne. *Recherches sur les connaissances intellectuelles des sourds muets considérés par rapport à l'administration des sacrements.*)"

Bebian, another Frenchman thoroughly familiar with deaf-mutism, holds the opposite opinion. He says: "The greater number of the deaf and dumb had already before instruction the idea, I will not say of a first cause, a notion too complicated for the feebleness of their intellect, but that of a sovereign being. They all have, if not the idea, at least the sentiment of good and evil." Abbé Montaigne from his study practically agrees with him.

Dr. Howe found that his favorite blind and deaf mute pupil Laura Bridgeman, "alone and unaided, sought God and found him in the Creator." (Dr. Howe's Reports, 1843, 45-50.)

Dr. Joseph A. Seiss (*Children of Silence*) says, "that persons who have never heard, do not, prior to education, arrive at that degree of mental development and activity, to realize the dawn generation, or entertainment of the transcendent idea of God."

The *Americana Encyclopedia* adds: "After extensive observation and inquiry we cannot hear of, or find, a single instance in which persons, born deaf and dumb, have conceived of a first cause, from a view of the works of nature without edu-

cation. They describe themselves as looking at those objects like the brute."

In order to discover whether any change of opinion had occurred among the educators of these unfortunates, correspondence was opened with several of the leading institutions of America. The outcome was but to find Dr. Peet's work still un-supplanted.

Miss Mary S. Garrett, principal of the Philadelphia Home for the training in speech of deaf children before they are of school age, says: "I take children between the ages of two and eight years of age and retain them about six years. Although I find it very interesting to have my children tell me about their material life before coming to us, and tell me things that happened to them when they had no knowledge of language, I have not yet had any child tell me of any spiritual experiences." Speaking later, after making special investigation, she adds: "The children do not remember having had any speculations on these points (God, soul, death, life after death, etc.,) or any thoughts thereof." Dr. Gallaudet, President of the Columbia Institution, Washington, D. C., says: "Our oldest professors find that nothing has come to their knowledge of late to change the conclusions reached some time ago, that the congenitally deaf and dumb had no ideas, before instruction, as to a future life." President R. O. Johnson, of the Indiana Institution, caused one of his assistants, Dr. De Motte, to make special investigation of the problem, and the latter replies: "All were early taught these things (matters of my syllabus), but none admit the least degree of self-knowledge on the subject. This result accords with those I have made at other times upon the same and similar topics. I have occasionally found congenitally deaf children, who, on partial and indistinct notions obtained, by pointings up and down and smilings and frownings, had constructed quite curious and interesting theories—if I may use so large a term—of spiritual matters, but they were not original nor natural."

Miss Sylvia Chapin Balis, of the Ontario Institution Belleville, a teacher of many years' experience, bears similar testimony, though she is of the opinion that instances have been met by her in which there were "certain vague and unexpressible ideas of some Supreme Being or natural force in creation." Judging from the content of her letter these clearly come under those last mentioned by Dr. De Motte. She instances the case of Laura Bridgeman as illustrating a *natural growth* into such belief. She finds the experience of Helen Keller has been similar, as also that of Tommy Stringer and Willie Robin, of Jamaica Plains, Mass. Through the kindness of Mr. George Begg and Mr. George H. Putnam, of the Texas Insti-

tution, my syllabus, in a somewhat modified form, was worked through the school. Mr. Putnam gave the matter his personal attention and found "nothing to show that deaf mutes, before instruction begins, have any ideas of God, the soul, or of a future life. All their present ideas of the subject are the result of instruction and not of independent thought." Mr. Putnam added a very suggestive point by saying these children are easily influenced by environment to deep religious feeling, or to atheistic tendencies.

From this extensive study of deaf-mutism, carried on by some of the most experienced teachers and encompassing a period of half a century; it is certainly safe to conclude that as far as they are concerned there is no evidence of a special endowment of the individual with a sense that early and unerringly leads him to a discovery of an inner essence possessing eternal life.

It must be acknowledged that were this the only data, such a conclusion would be at least rash, if not wholly unwarrantable, as in psychic ability the deaf mute is but little above the higher animals, while his acquisitive power is less, as he is deprived of one of the organs of the soul. Aristotle styled the ear the organ of instruction and of intelligence.

#### RELAPSED MAN.

There is another class of matter that may be admitted in evidence here, viz., Relapsed Man. There are a number of well authenticated cases where man has fallen back to the level and life of a wild animal; notably the case of the wild boy of Pindus, described by C. J. Cornish in the last chapter of his "Animals at Work and Play."

By Relapsed Man is meant the man who runs wild after civilization. He loses his manly habits, dispenses with clothing, lives on nuts and roots, sometimes raw flesh, assumes the manner of animal locomotion, mimics the latter in his vocal utterances, etc. He is found in three conditions: 1st. When a child has been carried off and suckled by some animal, as illustrated by those instances when the animal habits are completely assumed, *i. e.*, the child becomes carnivorous, ferocious, and bestial.

The second and more numerous class is composed of those types of individual produced by abandoned or lost children, who maintain their existence by aping the manners and life of the less ferocious animals, and making them their companions. The wild boy of Hanover found in the last century is a good example, as also the boy of Pindus.

The 3rd type, and not an unusual one in the mountainous regions of India and southern Asia, is composed of those in-

dividuals who are carried off by the wolf, children that are suffering from some mental malady, such as hycanthropy.

Col. Sleeman has collected a number of instances of the capture of children from the dens of wolves. The boy of Goomtee, India, forms a fitting example, or the one caught near Hasanpur. It has not been found possible to restore these types to the ways of civilized life. Language is lost, as is also all moral and religious sense. They are completely dehumanized.

#### REMINISCENCES.

As one special effort of this study has been to approach the problem from the practical and psychological, rather than from the metaphysical and speculative point of view, a syllabus was prepared by President G. Stanley Hall and the writer, and issued in order to obtain a free and frank expression of the individual on "the soul" and "immortality." About 500 returns have been received. These have been collated. As the replies have a wider psychological and pedagogical application than to the immediate question of continued existence, a somewhat full notice of them is given, and they are discussed in their general as well as their special bearings.

The first section of the syllabus was:

I. As a child what were your ideas of the soul? Did it have any material principle or bodily form, *i. e.*, of man, bird, or beast? Had it any definite location in the body? If so, where? As you grew older did the soul become to you more and more an immaterial principle or reality? When did this clarification take place? Name definite periods of time, if possible. What were the means by which this was brought about? At your present time of life has the soul any definite form? How does it leave the body? How get to heaven? Does it go alone or have company?

Three hundred and eighty-seven replies (95 males and 292 females, not including the aged people, nor children) were received in answer to this section. They are chiefly from persons ranging from 12 to 26 years of age, though there is a goodly scattering reaching all the way to 65. They are reminiscences, but the greater majority of those replying are still on the declining side of the adolescent curve. In order to make the study include all ages, in addition to the 25 children mentioned above, the writer, assisted by Dr. Colegrove, personally visited 102 adults from 65 to 92 years of age, and held with them an extended confidential communion on their view of immortality, and the effect it has wielded over their life. All conditions of mind are represented, extending from the learned professional type to the ordinary untutored laborer. The written replies are from doctors of philosophy, students of philosophy, psychologists, professional people, normal school teachers and

students, people of every walk of life and from five different nationalities. A very large number of the returns were personal letters.

The data shows the following results. *Form of Soul.* Like the human body, 55 M. 89 F., 144. Like a heart chiefly with wings, 2 M. 52 F. Like a bird, 1 M. 14 F. Indefinite forms, 2 M. 35 F. Beast, 1 M. 1 F. Foot, 1 M. 1 F. Ghost, 3 M. Somewhat spiritual, 12 M. 61 F. About a score had no thought of the soul.<sup>1</sup>

*Location.* In the heart, 35 M. 188 F. In the head, 8 M. 17 F. Whole body (inside skin), 9 M. 24 F. Without the body, 4 M. 10 F. No location, 39 M. 53 F.

A few typical returns are :

M., 19. As a child I thought the soul a kind of second heart with wings, and located in the fleshy heart.

M., 24. As a child I thought the soul an immaterial and invisible part of the body having the body's shape and fitting it exactly.

M., 18. As a child the soul always seemed a misty, foggy body, shaped like a comet, with the tail always pointing upwards. It had its location outside the body.

M., 19. To me the soul was a sort of floating white cloud above the right shoulder.

M., 17. As a child I had no definite idea of the soul, always associated it with the body.

M., 22. I thought the soul a large bubble, which grew as I grew. If it were to get broken I thought I should die. It was situated in the abdomen.

M., 35. When very young it seemed to me that the body went to heaven.

F., 19. I always thought of the soul as something white, shapeless, intangible, more like a white cloud, and located it in the chest.

F., 18. I thought of the soul as a round white spot, about the size of a 25 cent piece, situated beneath the skin on the sole of the foot.

F., 23. I always thought the soul shaped like a heart.

F., 17. I thought the soul a small, white stone, situated in the top of the head.

F., 19. My idea of the soul was that of a tiny, frail, white bird.

F., 17. To my childish mind the soul was a circular place in the heart.

F., 17. I thought of the soul as an egg in the center of the heart.

F., 26. To me the soul always seemed immaterial, but with advancing years this idea became clearer.

<sup>1</sup> Since this paper was prepared for the press, Dr. G. Stanley Hall's article on "Some Aspects on the Early Sense of Self," has appeared in the *American Journal of Psychology*, Vol. IX, No. 3. In President Hall's returns, there come out many of the childish conceptions of the soul, which material throws much corroborative light on the contents of my own paper. Dr. Hall finds just as many and just as varied forms for the souls as my returns show. Though his paper is chiefly concerned with the larger aspect of self, yet he devotes several pages to an elaboration of the soul aspect, and the treatment is so suggestive and scientific that I can do no better than advise the reader to consult the article in connection with the contents of this paper.

- F., 16. As a child I thought the soul the shape of a man with wings.  
 F., 20. As a child I did not think of the soul as having any shape but rather as a color; different people having a soul white, or black, or of an intermediate gray, according to goodness or badness.  
 F., 19. As a child I thought the whole body would be taken to heaven in a train.  
 F., 17. I thought my shadow my soul.  
 F., 20. When a child I thought the soul a pure white substance which could become soiled by black spots through evil deeds.  
 F., 17. I thought of the soul as having a head and shoulders like myself and then nothing but a white sheet.  
 F., 17. My soul was the picture of a beautiful fairy.  
 F., 18. As a child I thought the soul to be what is now called a ghost.  
 F., 45. I never thought of the soul as material nor did it have any definite location in the body.

The most striking thing in this part of the study is the psychogenetic parallelism that exists between the child and the race. The few remains of paleolithic man (Keary: Dawn of History) reveal a belief in the immortal part of man. Megalithic comlechs and dolmens and tombs of the neolithic period show clear evidence that the cave-dweller believed himself composed of more than flesh and blood. The exorcism of the spirit of the dead was effected by placing a layer of sharp stones across the entrance to the burial cave in order that the spirit might be forced thereby to remain in the tomb. (Keary: The Dawn of History.) The Egyptians represented the Ba in the form of a bird, while Horus appears as a sparrow-hawk. (Bastian: Das Thier in seiner mythologische Bedeutung, I. C. S. 161.) The Arabians gave the soul the form of a bird. (Cohen: Zeitschrift-Völker psychologie, 6 Bd. S. 121.) The Celts believed the soul issued from the mouth in a cloud-like shape about the size of a humble bee. (Hugh Miller: Schools and Schoolmasters.) Grimm tells us how King Gunthram's took the form of a snake. (Teutonic Mythology, Vol. III, p. 1082.) The form of a mouse was also common among the Germans. (Schwebel, l. c. S. 10.) Mahomet believed the soul took the form of a serpent and distinguished two classes. (Noldike: Zeitschrift-Völker Psychologie, U. S. W. I.B.) The Finns and Lithuanians called the milky way the "Birds Way." (Kelley: Indo-European Folklore, p. 103.)

Primitive peoples to-day give it various forms. For example the Pawhtas make it a little bird; the Hurons, a dove; the Domingos, a nightingale; the Caribs, a bat; the Burjäs and Mongolians, a bee; the Niaser, a spider; the Kaffirs, a fish. Among lower animal forms, the prevailing one is that of a bird. The nature depending entirely upon the region. This is perhaps psychologically to be explained by the influences of dream experience, *i. e.*, the rapidity of passing from place to place in the dream-life. Serpents also play a very important rôle in

primitive psychology. Among all primitive people, however, the prevailing form was that of a human figure. (Jacob Robinsohn : Du Psychologie der Naturvölker, Chap. 3.)

This close correspondence of the individual with the race is also seen in the localization of the soul. Early man placed it chiefly in the blood, heart, or breath, though a few made it synonymous with body-warmth, and hence located it throughout the body. Plurality of souls is an idea common to the child and the race. Many children have a good and a bad soul. (President G. Stanley Hall's Lectures.) The Egyptians, Hebrews, Persians, Chinese, Greeks, and Romans, Indian tribes of America, all had more than one soul. Plato gave man three, Aristotle, five. Mr. R. A. Oakes has fully developed this early conception. (Pop. Sci. Mo., Vol. 34.)

*Religiously* these replies exhibit no definite conceptions. The soul to most of them is materialistic. It exists not as a deep, inner consciousness, but as all nature exists, *i. e.*, objectively. It is phenomenon rather than noumenon, and it is very clear that without the endeavors of each generation to pass on the traditions of the elders such thoughts would never rise in the child mind.

*Psychologically*, is the child really an epitome of the race, and must he repeat its stages psychical as well as physical? Is there anything in the recapitulation theory, or is all this close correspondence a mere coincidence? It has been fairly well established that in his body the child bears numerous vestigial remains (Wiedersheim : The Structure of Man). May he not also have rudimentary organs of the soul? President G. Stanley Hall's article on Fears (*American Journal of Psychology*, Vol. VIII, No. 2), goes to answer in the affirmative, as does also Dr. Geo. E. Dawson's work (*Psychic Rudiments and Morality*, unpublished). The materialist would go a step farther and ask, is not the soul itself a vestigial remains? Is there any such thing? Is it not a mere mythopoeic creation?

*Pedagogically*, should the child be encouraged to believe in and objectify the soul, or should all diligence be taken to guard his impotent mind against such childish imaginations?

Before discussing more fully any of these lines of thought, some other matter must be presented. From the replies to the question seeking information concerning a clarification, the following interesting and suggestive table was obtained. A furtive glance reveals the parallelism between the psychic and physical development, and shows the period of puberty to be the dawn of the full religious consciousness. This result accords fully with a former study made by the writer (*Pedagogical Seminary*, Vol. V, No. 1,) and finds itself in full agreement with the studies of Drs. Lancaster and Starbuck (Lancaster : A Study of Ado-

lescence. *Pedagogical Seminary*, Vol. V, No. 3.) (Starbuck: *American Journal of Psychology*, Vol. VIII, No. 2.) The girls are found to precede the boys by about 2 years, which is also in accordance with child study results hitherto obtained. (F. Burk: A Study of Growth. *American Journal of Psychology*, Vol. IV, No. 3.)

Clarification Period.		A comparison of the sexes may be obtained by multiplying males by three.	
Age.	Sex and No.	Comp. Table of Sexes.	
8	M. 0 — F. 3	M. 0 — F. 3	
9	M. 0 — F. 5	M. 0 — F. 5	
10	M. 3 — F. 21	M. 9 — F. 21	
11	M. 3 — F. 11	M. 9 — F. 11	
12	M. 3 — F. 36	M. 9 — F. 36	
13	M. 2 — F. 23	M. 6 — F. 23	
14	M. 20 — F. 77	M. 60 — F. 77	
15	M. 35 — F. 8	M. 105 — F. 8	
16	M. 11 — F. 16	M. 33 — F. 16	
17	M. 1 — F. 7	M. 3 — F. 7	
18	M. 1 — F. 4	M. 3 — F. 4	
Gradual Growth,	M. 10 — F. 50	M. 30 — F. 50	
No. Clarification,	M. 7 — F. 30	M. 21 — F. 30	
No. Soul,	M. 1 — F. 1 N B		

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The rise at the age of 10 is due to parental, or other influences. Most of the females reporting this age carefully state that lucid explanation of the concept soul was given them at that time by parents. At 12 the girls are brought into contact with physiology, which send them in search of the soul. No reason is assigned for the marked rise of self-consciousness at 14 and 15. A few of this period speak of religious experiences, but most represent themselves as merely waking up to the fact that they had a soul. Possibly it was simply the result of a perfected mental organization which enabled them to intelligently comprehend the instruction of former years and to perceive the same in its deeper, fuller significance. More probably it was due to the psycho-physiological changes peculiar to pubertal life. (Starbuck: *Journal of Psychology*, Vol. IX, No. 3.)

The curve again rises at 16 through the influence of psychological study.

The chief agents in this clarification were: Talks with parents, teachers, friends, and reading. A few mention conversion and confirmation.

Very suggestive pedagogically is the fact that 60 experienced no marked change, but had a gradual growth, and that 37 are still entrained by their childish vagaries. It doubtless would be found, on closer examination, that all those who had the concept in the form of the human body still retain this mental imagery. Anthropomorphism is characteristic of humanity.



What is needed in religious instruction is not the supplanting of such conception, but the weeding out of all those idiotic abnormalities that the childish imagination will build up if no better direction be given to the channels of its activity.

To the speculative question of how the soul gets to heaven: 30 M., 149 F., would have it accompanied by angelic attendants or by loved ones; a few think Christ personally accompanies the soul. 6 M., 63 F., imagine it as going alone. 5 M., 13 F., think it is in heaven now. 67 F. have no idea. 1 M. has no heaven. 42 did not reply. Before drawing any general conclusion I wish to add the material collected under two other Rubrics.

#### HEAVEN.

II. As a child what were your ideas of heaven? Did it have a definite location? If so, where? Was it like a city or great palace or what? What and whom did you seem to see there in your moments of reverie? Did you long to go there or prefer life on earth? Has any experience in life made heaven nearer and dearer? As you grew older did your views of heaven change? Can you state the period of change, and the motive for the change? Do bodily feelings, such as fatigue, joy, depression, failures in life's work, etc., ever influence your views of the after life? Describe fully. How do you conceive heaven and life after death now?

Replies were received from 97 males, and 325 females.

Speaking of location, 81 males and 320 females placed it above the clouds. Most made the sky its floor, and looked upon the stars as holes caused by angels' heels. Study of astronomy rudely shook the faith of many of those reporting, as they could find no place for a definite location of their materialized realm of delight.

Why the human race should have placed its elysium above is an interesting problem, and possibly finds its solution in primitive nature worship. Max Müller, and those who maintain that man is endowed with a sense of the infinite, would probably make Nature only the stimulus to call forth this feeling of oneness with the All-power, and would find on the boundless expanse above, the best expression of the greatness and domain of God. To those replying, it is the product not of spontaneity but of environmental instruction. 2 M. and 2 F. placed heaven beneath the earth. This was an inference drawn from burial. 2 F. placed it beyond the horizon, thus thinking of it as another country. President Hall writes of the Boston children: "Many children locate all that is good and imperfectly known in the country, and nearly a dozen volunteered the statement that good people when they die go to the country—even here from Boston." Sully also finds that very young metaphysicians "place their heaven in the country, the unknown beautiful region where all sorts of luxuries grow."

(Studies of Childhood, p. 122.) Earl Barnes (Theological Life of a California Child, *Pedagogical Seminary*, Vol. II, No. 3,) also found several children locating heaven on earth, though the greater number placed it in the sky. Very few would have their future domain in the stars. The favorite form of heaven is a city; 54 M. and 154 F. speak of it as such. 14 M. 69 F. compare it to a country. Here also belong: open space, 8 M. 26 F.; an avenue, 3 F.; park, 4 M. 2 F.; great garden, 4 M. 12 F.; forest, 2 F.; and Indian happy hunting ground, 1 M.; 22 M. and 35 F. thought of it as a gorgeous palace studded with rooms and glittering with ornaments of gold and jewels and precious stones; 8 females considered it one great room occupying the whole of the sky; 1 F. a collection of connected buildings; 1 F. a church; 1 M. a cabin; 2 M. and 7 F. gave virtually the apocalyptic scene; 11 F. saw heaven in the clouds.

The 25 children studied think heaven an exact copy of their home and its environments. Sully and Barnes both find this same diversity in the child's conception of heaven. Barnes says: "Heaven is generally, even with children up to 12 years of age and beyond, an improved earth." In my studies there is nothing to definitely guide in determining an age period, so none has been attempted.

The psychological explanation of this mundane portrayal of the celestial home is two-fold. 1st. The child up to about the time of puberty is in what might be called the realistic stage; the allegorical period lies on beyond. 2nd. All our songs and descriptive phrases are such as would build up in the fertile imagination of childhood most real scenes. Several of those reporting speak of the Gates Ajar, Stepping Heavenward, Within the Pearly Gates, Romance of two Worlds, The Little Pilgrim, Pilgrim's Progress, and the scenes in Revelation, as giving them their imagery. Songs, such as: Child of a King, There is a Happy Land, "I will Sing you a Song," "Sweet By and By," etc., are freely mentioned.

If the deduction be legitimate that children are close disciples of Berkeley up to the time of pubertal activity, then all our methods of religious instruction are radically at fault. Instead of aiding the child to clear, well-defined, legitimate ideas, we present to him a crazy patchwork of instruction, in which the abstract is largely present, and leave him to the mercy of his own fantasy. How bizarre their ideas are is clearly shown by the work of Mr. Sully, Mr. Barnes, and the Worcester collections of thoughts and reasonings of children.

As a Sabbath School worker I may be permitted to turn critic. If so, I should say that the great defect lies in the fact, that Sabbath School workers have (1) no knowledge of child life

other than their own reminiscences which they too often fail to utilize; (2) Have no philosophy of religious pedagogy, *i. e.*, they "begin nowhere and end nowhere." I do not mean to say that good, faithful work is not being done in endeavoring to lead the children to a personal knowledge of the Christian experience. That is only one side of the problem. There is the task of leading the children into a grand, deep, soul-enriching, life-energizing conception of spirituality that need never be shocked, nor alas in too many cases, be overthrown by contact with the wider and materialistic teachings of science and life.

Such crude conceptions of the soul, and the following of heaven, certainly cannot afford much material for soul growth. The things reported as seen in heaven are: Angels, beautiful birds, gardens with trees — silver lakes, children, people playing on instruments, God's throne, bright happy people, dead friends, palaces, houses, God, Christ, Holy Ghost, apostles, saints, martyrs, biblical characters, white mansions, thrones, golden streets, golden walls, people sitting in rows, flowers and fruits, delicious breezes, flowing rivers, mossy banks, hills and woods, green grasses and brooks, people in white, hundreds of dolls, golden gates, thorny paths, palms and green plants, fountains, music, a great book, jewels, two guardian angels at the gate, sheep pasturing, broad fields, golden harps, crowns, high walls of pearl and jasper, precious stones, white doves, all kinds of flowers, watermelons, pecans, candy and cake, bananas, cocoanuts, etc., etc. All these things appeal to the sensuous side of life, possibly to the æsthetic sentiment, certainly not to the spiritual.

How the solution is to be reached is baffling. Two or three principles may help. The child must be made the center of instruction and all teaching must be adapted to the stages of development and in such a manner that each growth will absorb the rudimentary organs of the periods. (2) Nothing should be taught as TRUTH which will have to be unlearned at some future time. (3) The soul is also subject to the laws of growth, and must not be treated as a reservoir into which may be dumped the metaphysical absurdities of adults. (4) If the early years are times of realism, then the purest kind of realistic (objective) instruction must be employed. The Pestalozzi of religious instruction has still to come. The question is a vital one in this age of doubt and unrest. I raise it with the hope that some solution may yet come. It does not seem to me that the complete separation of religious truth and scientific truth is desirable. There ought to be no conflict between them, and he who sees in broad perspective will find none. Of course the dogmas of science and those of religion may always be at variance, but dogma is not necessarily truth.

The old people studied all looked upon heaven as a grand country home. The question of *rest* did not play a large part in the drama of their imagining. Activity seemed to be the desired haven.

Among those reporting: 20 M. 45 F. desired to go to heaven, while 69 M. and 192 F. preferred life on earth. Many of these latter looked longingly upon the delightful land, but death and the grave stood as a barrier between.

Sixteen M. and 60 F. testify to a progressive change of heaven's imagery, specifying it as a growth towards the conception of God as spirit, and heaven as a spiritual community. 50 M. and 171 F. reply that they still conceive of heaven in the terms of their childhood, though of course its significance has been broadened and deepened.

Bodily feelings are not so potent a factor, as many have supposed, in keeping alive the human interest in a future existence. 40 M. and 103 F. find themselves indifferent as to emotional influences. 18 M. and 26 F. declare their moods of joy only intensify the anticipatory delights, while moods of depression suggest the thought that it will be all right by and by. 8 M. and 11 F. speak of joy as strengthening their hope while despondency and disappointment destroy all regard for continued existence.

These figures are small, but so far as they go they fly in the face of the psychologic theory advanced by Runze (*Psychologie des Unsterblichkeitsglauben*, p. 31 ff.), that heaven is a mere creation to satisfy the injured feelings. Very few indeed looked upon heaven as a place of reward, but regarded it as a sphere for continued future usefulness. As this part of the questionnaire is not reminiscent, but present personal testimony, this becomes all the more cogent.

The causes assigned for the change of conception of heaven are: Death of loved ones, 44 M. 174 F. Conversion or deepened Christian experience, 15 M. 41 F. Clearer instruction, 5 M. 26 F. Sickness, 1 F. More than half of those replying (not including the children nor the aged) speak of death as the one agent that binds their hopes to a heaven. This sounds very much as though Prof. James was right when he said in effect that our desire for heaven and immortality is the longing of our bowels for our loved ones. Runze also emphasizes the great office death has in perpetuating the religious sentiment.

It is interesting to note the replies to the empirical question: "How do you conceive heaven and life after death now?" 16 M. 83 F. reply, a place of praise and happiness. 34 M. 24 F., a place of activity. 22 M. 30 F., a place of development. 6 M. and 40 F., a place of reunion. 4 M. 25 F., a place of

rest. 8 M. 12 F., a state rather than a place. 12 M. 12 F., a place of reward. 4 M. 7 F., a continuation of life. No conception, M. 18, F. 34. No heaven, 1 M. 1 F. A few condensations.

F., 20. Heaven was up above the stars, was like a city, every family had a house. I seemed to see God and angels and mother. Death of friends has made heaven nearer. My conception of heaven has changed but slightly. Bodily feelings have but little influence, though joy intensifies my conception of the happiness to come, while fatigue, depression, etc., may make heaven desired.

F., 19. I think of the white throne in connection with heaven.

F., 17. I used to think at sunset that the beautiful red and yellow flowers were a little bit of heaven.

F., 27. I have no idea of heaven other than that given in the Bible.

F., 17. I always thought of heaven as being similar to our life here, only everything was so much nicer.

F., 18. I thought good animals went to heaven too.

F., 18. To me heaven was located below the earth. When a small child, I would wander to the cemetery and peep into all the holes and look around the headstones to see if I could find any road which led to heaven.

F., 18. I now think of heaven as a place where all shall be united and live in happy friendship.

F., 19. I used to think heaven a place where every little boy and girl did as they wished and had all the candy and toys they wanted. Later I thought heaven a large country place with green fields and flowers. I saw children with their parents. When a friend dies heaven becomes dearer. I cannot express my present conception.

F., 17. I think of heaven now as a refuge from life's cares, when life's work is done.

F., 23. Heaven was to my childish fancy a great avenue paved with gold, with rows of tiers and tiers of seats on each side on which the people sat. I used to fancy at times that when I died I would be born again, perhaps as a colored child or Irish washerwoman. This idea caused me much misery.

F., 16. I thought of heaven as pictured in Revelation. My views have been greatly influenced by reading Miss E. S. Phelps's "Gates Ajar."

F., 17. I did not long to go to heaven, as I wondered what the people could find to do there, and so thought it was rather tiresome. To me now heaven is a state rather than a place.

F., 17. To me heaven consisted of two distant buildings infinitely large. Between them stood the throne where God sat with a book of our life's work.

F., 23. Heaven was to me a city located in the sky. Its streets were wide and pavement shining. There were houses with glittering domes and spires. The entrance was through a gate, and just beyond this was a beautiful park where children played, birds sang, and flowers abounded. I saw the Saviour standing near the gate. God was on his throne, near which was a great book. Angels were ministering and friends were happy. I saw my loved lost ones. I preferred life on earth with parents. When 14, the book, "Stepping Heavenward," impressed me very much. Death of a brother has made heaven dearer. As I grow older my views of heaven do not change. Bodily feelings do not exert much influence either way. I still think of heaven as a beautiful place where there is perfect happiness.

M., 18. My idea of heaven was a city with magnificent temples.

M., 22. I did not think of heaven other than an immense throng of people with God as the central figure. I desired to go there. Death has made heaven nearer. Later my views have become more vague. I still think of it as a place where the pure in heart shall live forever.

M., 21. Heaven seemed like a beautiful garden with wondrous trees. Therein was a stream and a silver lake. Children played on the shore.

M., 35. My hope is that heaven is such a place, and such a circumstance, and such company that the mind may go on developing eternally.

M., 26. Says as he grew older he wanted to think of heaven as a regular "Indian's Happy Hunting Ground."

A careful study of the replies to this section reveals the following facts. Boys much more frequently than girls experience a doubt period. This is probably one element of the psychic correlate to the physical variability of the male. Throughout the biological series the female is the stable preservative element, while the male tends to break away from the conservatism of its race. (See H. Ellis: *Man and Woman*.)

2nd. The male looks upon heaven as a place of activity, further development, a continuation of life's features, a place of reward, a state rather than a place. The female views heaven more concretely, thinks of it as a place of praise and happiness and rest; a place of reunion, a happy home. The differentiation of these views are evidently largely the product of environmental influences.

3rd. Youth fancies heaven a place of continued endeavor and activity; old age a place of rest, a hiding place from the burdens of life; philosophy, as a state of growth in knowledge.

4th. The judgment throne and the book form a very prominent part of the mental imagery of nine-tenths of those reporting; one can easily fancy what must be the ethical consequent of such an ideal. It may be, as Shelley has said of the hereafter: "a whip to keep a coward to his work." It is not so to the obedient spirit. Its theological import must be intense.

5th. The question of rewards takes a very low position among the influences that go to motivate the celestial hopes. Constantly does one meet the aspiration to live a life worthy of continuance, rather than the desire for a heaven to satisfy the injured feeling. One must not draw too wide an inference from this fact, as the vast majority of those reporting are in the period of ambitious and altruistic endeavor, 30 or 40 years hard and bitter conflict with the oppressive and discouraging difficulties of life may modify even heaven's aspect.

6th. The thought of heaven, and especially the thought of loved ones waiting and watching acts mightily upon the adolescent heart, leading it to form lofty resolves and aiding it to

carry them to fruition, and comforting it in times of peril and failure.

7th. The chief characteristic of the replies from the philosophic student and from the older people was the more definite spiritualistic and idealistic conception. Most of them had ceased to view heaven as a place and looked upon it as a mode of being, a changed condition, in which progress and freedom is the law. All, save one, adhered to some kind of existence corresponding to heaven.

8th. Death visions of dying friends have been interpreted as an encouraging message from the land beyond.

9th. Here again is met the close parallelism existing between the child and the race. The Egyptian state of the dead was not a passive condition of bliss, nor one of endless joy. He retained his earthly personality, employed his energies in a manner similar to what he had done on earth. In the Aalû fields they ploughed the soil, and seeded the ground, and gathered the fruits thereof, and trod out the grain with the ox, the same as in the fertile Nile valley. The Vedic worshipper looked upon death with no terror. To him there was somewhere a region where the gods dwelt; where the children of men were assembled anew under the scepter of him, who was the first progenitor of their race—the divine Yama. They had no idea of retribution. The after life was but a prolongation of the old life under changed conditions.

Nothing could be more real than the "Hindoo Paradise of the West." Its grandeur is surpassed only by the vision of the lonely inhabitant of the Isle of Patmos. The allurements of Nirvâna is possible to only a few of the elite of life. For the common people there is a series of heavens proportionate to merit, where beautiful scenery, pleasant society, good cooks and pretty women, make as material and attractive a paradise, as that desired by Mahomet. (L. Griffin: Fort. R., Vol. LIV, also Eitels 3rd Lecture.)

The eschatology of the Avesta resembles somewhat that of the Christian. (Dr. Griger: Civilization of the Eastern Iranians in Ancient Times.)

Islam has an enchanting Elysium situated in a noble garden of streams, and fruits, and flowers. There the inhabitants surrounded by beautiful, dark-eyed maidens (Houri), drink costly wine, and enjoy unending bliss, clothed in green garments of brocade and damask and adorned with silver amulets. (Krenver Du herrschenden Idean des Islams. S. 76.)

Among the Chinese, as also among all primitive peoples everywhere, the grave has been the abode of the spirit. The Slavonic had a shadowy land of the underworld and a "Happy Eastern Isle." The Teutons also held the grave to be the

domain of the spirit, though many believed in the Kingdom of Hela. Scandinavia's Valhalla was a veritable battlefield on whose confines was situate a huge tavern where Odin held sway. (Eddas.)

The Hebrew Sheol, the Greek and Roman Hades were material. Etruscan tombs reveal the soul in sensuous delights, and every Western tribe has its happy hunting ground.

The psychic similarity does not necessarily justify the recapitulation theory, but simply substantiates the doctrine that mind is mind the world over and will react in similar ways to similar problems.

#### IMMORTALITY.

III. Has your belief in immortality been an unfoldment of your nature, or is it the result of parental influences, scriptural teaching, observation of natural phenomena, loss of friends in death or your own inability to conceive your existence as coming to an end? How has the belief been strengthened or weakened as you grew older? Was there any particular period in your life when you felt yourself immortal? If you are now aged how do you view the teaching? Is your faith therein ever influenced by elation or depression, success or failure, etc.?

This and the remaining sections are fullest in replies. 409 females and 116 males send written returns. These with the children and aged people make a reporting body of 652.

The aim of this section was to discover as far as possible how far the immortality sentiment is the consequent of natural, normal development of human nature, and how far it is the product of instruction. The following figures and condensations will show what success has attended this effort. 27 M. 95 F. cannot remember the time when they did not believe in immortality, consequently attribute the faith to an unfoldment of their nature; 86 M. 253 F. think it the product of parental influence; 88 M. 309 F. attribute their belief to scriptural teaching; 14 M. 101 F. speak of loss of friends in death; 17 M. 52 F. of observation of natural phenomena; 21 M. 85 F. of their inability to conceive of their existence coming to an end, and 1 M. 2 F. of evolution.

It is impossible to tease out these genetic fibres so as to disclose the true inceptive element. Several of those answering ran the whole gamut. It is probably safe to say that they all have been factors in progressive development, but the main source is to be found in parental or other influence. The figures show this. There were, however, clear instances of entire absence of parental teachings. The social *milieu* is such that it becomes impossible to imagine, devoid of scriptural influence, a community in which any of those replying may have lived. So far as these papers go, then, this whole faith may be nothing



but the product of instruction, the same as any other abstract principle.

Typical answers are :

F., 17. As a child the thought never entered my mind of there being no existence after death. Even the birds, and animals and plants seemed to go on living in some way.

F., 26. I think my belief in immortality the result of parental influence, scriptural teachings, and my observations of natural phenomena. The loss of friends in death has tended to strengthen the belief.

F., 26. Disbelief in immortality resulted from loss by death; belief in immortality came from careful reading and study of the subject. Belief has been strengthened as I grew older by increased interest and thought.

F., 19. I cannot account for my belief in immortality. I only know that I always believed in it from my earliest recollections.

F., 21. I think that my belief in immortality has been an unfolding of my nature, as I have taken particular pains to reason it all out by myself.

F., 18. My belief in immortality is the result of my mother's teaching, and what I learned in Sunday School and Church. I believe in the Bible and therefore I believe this doctrine true.

F., 21. I have always believed the soul exists after death. I have been so taught and unquestioningly believed. I sometimes feel the spiritual influence of lost loved ones all about me. Life to me is so wonderful that I cannot conceive of its finality.

M., 25. Belief in immortality is the result of parental influence and scriptural teaching, and was strengthened by the death of my mother ('96), who, after having lost consciousness of all those around her, raised her head and said, "Mother," "Sister," and they had been dead for a number of years.

M., 21. My belief in immortality has grown stronger. I cannot conceive of people having the same end as animals. My belief has been strengthened by lectures and reading, yet there is a something that tells me and convinces without proof that I am immortal.

F., 19. It is impossible for me to have any conception of immortality because in our home, I was never taught such a doctrine. We have no religious views in our family, therefore the soul to me does not exist.

F., 19. I don't think there was any period in my life when I did *not* feel myself immortal. My faith is not influenced by elation or depression. Religion would be of no value to me without this hope.

These last two are introduced to illustrate an antithesis that is more or less pronounced in life.

79 M. 304 F. find the belief growing stronger, and assign the motive to death of friends, reading, observation of nature, Christian experience, deeper knowledge of biblical truth; 6 M. 8 F. find the belief weakening with advancing years; 1 M. 15 F. do not know whether it has strengthened or weakened.

The question which sought for a definite period when the sense of immortality was particularly strong, entirely miscarried, as the greater number interpreted it as asking whether they ever felt that they, Elijah like, would not die. 72 cases, however, are reported. The testimony is conflicting; about half

say "There has never been a period in my life when I felt myself immortal." The other half replied in the affirmative and specified definite time, such as at conversion, when twelve, at the time of mother's death, now, etc.

The testimony on the influence of elation and depression corroborates that given under the section on heaven. Emotions seem to work both ways. A girl 17, says: "When joyous, heaven and future life vanishes from my mental horizon; when sad or depressed, I long for a future rest." While another, F., 26, says: "Faith in immortality is *increased* by elation and success, decreased by depression, failure, etc." It would be vain to deny that the hues of a coming glorious existence do not receive their tints from the emotional states, but it is possibly unjust to go so far as Dr. Mitchell has and assert that triumphant death is dependent upon the location of disease. He remarked that he had never seen a triumphant death in a person diseased below the diaphragm. This may be true and yet not argue against the general testimony of many witnesses, as there is clearly a physiological reason.

The girls, as the returns show, are much more emotional than boys.

There is still another class of data, viz., the testimony of the 102 aged people. These were visited in their homes and represent a great variety of creed, extending from the extreme theist to the out and out atheist. In age they ranged: 24 from 60 to 70; 56 from 70 to 80; 22 from 80 to 92. Of these, 1, M., 66 years of age, does not believe in immortality. As a child he doubted the existence of God and the authority of the scriptures and has been an atheist all his life. 3 M. and 1 F. have found the belief weakened with increasing years. The chief causes assigned for such: The "inconsistent lives of professing Christians." "Not finding people square in business." "Life of every day associates," and "church lawsuits." What these could have to do with a rational determination of a man's faith is difficult to comprehend. It is worthy of note that in all these cases the decline of faith was due to extraneous circumstances and not to the unreasonableness of the doctrine. These four are types of a large majority of unbelievers, *i. e.*, some personal rather than logical motive has warped their nature and with it their intellect and emotions. The remaining 97 find their faith strengthening daily. The source of their confidence is their own inner nature, a sort of Socratic demon that was a constant admonisher. They all finally fell back upon the scriptures and trace the origin of the belief to the moral atmosphere of their childhood. A few of them, and particularly my atheistic friend, have reached through ratioci-

nation a faith in continued existence. With all it is personal but varied in its nature.

There is possibly another element of human experience that might be introduced to throw at least a side light upon the question, namely, the personal consciousness of the existence of a Divine Being. No endeavor was made in the questionnaire to gain any information, but it is a well known tenet of the Christian, Semitic, and Islamic faiths, and the highest endeavor of these is to bring the individual into this conscious personal relation. Such a relation, it is claimed, leaves no doubt to man of his immortality, because he partakes of the nature of the divine.

Very appropriate here is the recent (Jan. 6th Christian World) utterance of the greatest student of religions outside of the pale of the priestly office, Max Müller. He sums up his creed in these words: "I believe in one revelation only—the revelation within us, which is much better than any revelations which come from without. That inward voice never allowed me the slightest doubt or misgiving about the reality of a future life. If there is continuity in the world everywhere, why should there be a wrench and annihilation only within us?"

At this period a pause may be made and soundings taken in order to determine our moorings.

In the study of the congenital mute nothing has been found which would indicate the existence of a special religious faculty whose absolute function is to lead its possessor to a knowledge and certainty of immortal existence. In relapsed man the evidence is clear that such inherent powers do not exist, as all future endeavor to give him any conception of God, soul, and heaven, have been completely futile.

In the child there is no evidence other than that its intellectual and emotional life is the product of hereditary (biological) and environmental discipline.

The aged are unanimous in attributing the peace and assurance of an endless life to a double revelation, one in their own heart and one in the holy life and thoughts of others and in the teachings of scripture.

All this seems to indicate not a body of innate ideas, asserting themselves infallibly, but a prepotency or disposition on which may be grafted this branch of truth. What these prepotencies are, or whence they came, can no more be determined empirically than the origin of instinct. Theories there are, but the everlasting *why* still remains unanswered. Something there is in human nature that readily and eagerly responds to such instruction. In man to-day this something is not so difficult of explanation, but in primeval man it lies hidden in profound mystery. In the following chapter an attempt will be

made to analyze the belief into its elements and thereby discover some of the factors that have entered into the composition of the same.

## CHAPTER II.

### A. BIOLOGICAL CONSIDERATIONS.

In the animal world there is nothing that indicates the presence of ideals. Intelligence there is in the realm of sense experience, as may be seen in the constant intelligent adaptation of animal activity, but with Lloyd Morgan (*Comparative Psychology*, p. 358), we must believe this to be the product of sensuous association, and not of spontaneous reasoning on the part of the animal. Emotional life there is, but not such as is born of a keen appreciation of relations and conceptions. *Æsthetic* judgments they possess, but no ideals. They may exhibit evidences which, in man, would prove the presence of conscience, a moral sense, but here, too, they are devoid of any standard of truth other than that born of sense experience. Being devoid of the ideal he becomes the plaything of environment, while man, in the struggle for the attainment of his ideals as things worthy of desire, rises above the sensuous and makes his environment the agent of his progress. Whatever difference may exist between man and the lower animals, there will be found in the sense experience of animals the raw materials out of which much of the higher life of man has been evolved.

Speaking on this point Morgan says (p. 375): "We have impressions and the transitions between them, which need only the faculty of perception, together with the generalizing and analytic power of conceptual thought to quicken them into knowledge. We have emotional states, which, when standardized in reflection, may be sublimated to ideals, and we have a native practical energy which needs only a new application in the *will* to attain knowledge and realize the ideals, and when man became man, and began to utilize his newly acquired powers, he did not leave behind him for good and all the life of sense-experience. . . . He has not left behind him the emotions of his animal nature, he has idealized and purified them.

Nothing can be found in the animal life that would approach any resemblance of consciousness of continued existence, nor is there any authority for saying that he prefigures death. To expect such would be to expect gold from tinsel or virtue from the vicious, but there may be found in the animal series that which in man has ripened into the consciousness of continued personal existence.

It would be a *petitio principii* to assume with Professor Cope, that there have been at least three elemental factors at work in evolution, viz., matter, force, and consciousness (Origin of the Fittest, p. 230), by which term he means physical sensibility, the earliest manifestation of mind, but I do not see how there can be a satisfactory hypothesis for evolution without such assumption, and it further seems to me the empirical facts gathered by Darwin, Spencer and other workers do not violate such hypothesis. Prof. Cope refuses to subscribe to the theory that consciousness in this sense is the product of force. He rather thinks it a force itself, for he says "the nature of consciousness is such as to distinguish it from all other thinkable things, and it must be ranged with matter and force as the third element of the universe." He refuses to accept evolution as the dead mechanical thing many writers would make it, and while he admits the play of natural selection, sexual selection, survival of the fittest, and all the other agencies so earnestly invoked, he makes the center and crown of them all "mental selection," or the willing response to pleasure and pain stimulus, which leads an organism to choose an environment best adapted to its physical well being.

This seems to me to be the most intelligible and probable evolutionary hypothesis, and one largely borne out by the facts. It certainly is not fraught with all the vitiating influences that attend the mechanical view. It is free from deterministic fatalism and does no violence to the moral interpretation of the universe, does not offend the deep sense of justice, and requires no serious modification of existing ideas on the great questions of right and wrong.

The vital question for us is, whence came this third element? Sir William Thompson does not hesitate to declare life an exotic to our planet (Cope, p. 442). Cope, too, bursts the narrow confines of this earthly planet and makes consciousness (life) peculiar to the universe. He finds no difficulty in peopling the circling worlds, as life builds for itself its own body suitable to its environing conditions. Prof. Le Comte, of California, holds a somewhat similar theory, in which he recognizes all life, as an offshoot of the Divine, coming to full self-consciousness in man. Theories there are, too, of a physical basis for continued existence of which Stewart and Tait's *The Unseen Universe*, or Willink's *World of the Unseen*, are typical. All the better science recognizes Deity in some form, though many think him unknowable. Hence on the evolutionary basis above proposed, on the theory of an extra mundane origin of life, and consequently on the negation of the hypothesis of spontaneous generation, there seems to be an element at work in the development of organisms that did not have its origin in matter, nor

force, and consequently antedating their organization may also outlast their dissolution. Thus biology is giving a scientific foundation for the more modern interpretations of truth.

If, however, the interpretation given evolution by Weismann, Büchner, Vogt, Heckel, Brooks, and others of this school of thinkers be correct, viz. : That mentality in all its forms, both inceptive and perfected, are but the product of energy springing from peculiar molecular or atomic combinations, resulting from the play of fatalism, then our problem assumes an entirely different relation to the existing and active forces of organic life. Instead of an element independent of matter and reaching its highest fruition in the human, we have but the perfected combination of white and gray matter, functioning so accurately as to produce in man his highest ideals. Instead of viewing the encephalon as a physical device on the part of consciousness, which it employs for the registration and retention of its psychic life, and the machinery whereby the past may be renewed, it becomes mentality itself. On this view there can be no continued existence, after the breaking down of the physical, other than that represented by "Conservation of Energy." Until, however, this theory can put forth a tenable hypothesis for life, for the freedom of will manifested in all altruism, and can give some satisfactory explanation of the teleological significance of existence, until then, it cannot remain a satisfactory theory.

Biology touches our problem in another important way, in its relation to the Weismannian hypothesis of a continuity of germ-plasm. As this will be discussed under the chapter on "Characteristic Beliefs," further mention need not be made of it here.

#### B. PSYCHOLOGICAL FACTORS.

Psychologically, we assume that the doctrine of immortality has been a growth, and has had its stages of development, beginning possibly in the unconscious stages of animal existence. One meets very little difficulty in setting forth the progressive nature of the belief as exhibited in the life and laws of Jewry. In the teachings of Moses, the idea of immortality is dim, yet withal, there is throughout his writings the underlying consciousness of continued existence. It had assumed the form of a conviction rather than a doctrine. Sheol was to the Hebrew mind not the grave, but a shadowy personal existence. Several expressions found in Genesis and Numbers (Gen. v, 24; xxv, 8, 17; xxxv, 29; xxxvii, 35; xlix, 33. Numbers xx, 24), and in the other earlier books of this people are clearly indicative of this fact. With the coming of the psalmist a clearer light dawns. The later prophets proclaim its truth. In the New Testament it is a fundamental doctrine. Thus at

first, dim and vague, it finally became the conscious possession of the Jewish heart.

On the basis of evolution we have to assume, that there was a time when immortality was even more vague to the soul of man than it was to Abraham. We have to suppose that there was a childhood period in the life of the race, the same as in the individual, during which it lacked the mental capacity and the linguistic agency to wrestle with abstractions, and especially with the psychical idea of primal force, spiritual entity, and continued existence. There is every reason to believe that psychological evolution co-ordinates at every point biological evolution. This has been somewhat fully worked out by comparative psychology, aided, of course, by all biological studies, and especially those of animal activities.<sup>1</sup>

Ontogenetically we know there is a period of indifference corresponding to the imperfect functioning of the organism following foetal life. This indifference period is a mere vegetative stage, and by slow degrees gives place to the second or emotional period which in its turn is followed by the third or intellectual. Hulings Jackson and Flechsig have clearly indicated the anatomical basis for these successive stages of psychic existence. Philogenetically the same three stages are well established, so that there is every justification for considering the deep fundamental principles that to-day are potent in the life of the race, to be the product of a progressive development, and there is no reason to believe that the doctrine of immortality forms any exception. It will, therefore, be the aim of the remainder of this section to indicate a few of the forces that have pushed this problem to the fore.

On the physical side, the tap root is that neural disposition induced by countless ages of reaction to painful and pleasurable stimuli that have created in the animal life the spirit of "self preservation," or as Schopenhauer would term it the "will to live." Stimuli that were pleasurable would tend to the perpetuation of the individual, while those that were painful would lead to its destruction; thus there would be produced, by natural selection, species in which the love of life would be stronger than indifference. Very early in the animal series memory entered, and with it began the mechanism which enabled him to more favorably react to his environment. As the

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<sup>1</sup> The literature is so accessible that there is no gain in burdening this paper with the details of the subject. For the reader who is interested, perhaps Lloyd Morgan's *Comparative Psychology* is as good a handbook as any. Every work on evolution contains many of the cogent factors. Copes's *Origin of the Fittest* has many of them in a very convenient form. Guillet's *Animal Activities* is very full, and Burk's *Study of Growth*, presents the neurological facts.

emergencies of existence multiplied, this neural mechanism increased in intricacy until it reached its highest development in the cortex of man, when the self-conscious deliberative elements largely supplanted the more automatic activities of lower life. This will to live, strengthened by the accumulating increments acquired through succeeding periods, would fall with such force upon the dawning self-consciousness of man, that it would become impossible for him to conceive of his conscious existence as coming to an end. This we know to be the condition of the child and anthropology shows it also true of the savage of to-day. Even the highest type of mind practically believes every person else mortal except himself. This tenacious grasp of life, this persistent clinging to existence, is the earliest psychic element that has contributed to the development of faith in continued personal existence after physical death.

The second, and perhaps most potent agency, was the realization of his dual nature. Some one somewhere has said, that the profoundest, the most far-reaching discovery ever made by humanity was effected by the cave man, when looking to earth, and sky, and sea, he realized that he was different from all these, in that he was them all and something more. How man reached this dualistic conception is difficult to definitely determine. That death played a rôle therein is quite evident. Naïve primitive man, standing fearful and astonished before the desouled body of a dear relative, must have reached the conclusion, that something had left the dead one, who only a moment before spoke and moved, and that this something may be the individual personality, the impelling agent in the body dead in itself.

Sleep has confirmed this significant conclusion. An ingenious Greek gnomic poet has called sleep a pre-exercise of death, and in mythology, Hypnos and Thanatos appear as twin brothers. (Robinsohn: *Die Psych. der Naturvölker*. p. 2.) Through dreams sleep receives a significant content. Its peculiarity consists in this, that we do not know we are dreaming, but believe ourselves awake. Primitive man considered the dream a real experience, and when assured by his companions that his body had not left the couch, he necessarily concluded as in death that something had left his body, and hence would annul the dualistic conception of man.

Primitive man to-day, still maintains that man's soul has power to thus separate itself from the body, and may sport itself in many a fashion, may gather valuable information, or may enter into covenant relations with other spirits which will be binding upon the individual. The Greenlanders believe the soul at night goes hunting, or to the dance, or on a visit. (Cranz *Historie von Grönland*.) The Kantschadkan gains an-



other's boat by sleeping in it in his dream. The Buraten think the soul wanders over the earth during sleep, and brings back memories of its experience. The Vedanta teaches that the soul during sleep visits God. German Sagas speak of the danger of awakening a sleeper too suddenly. (Schwebel O. Tod und Ewiges Leben im deutschen Volksglauben.) The Bohemians consider it unadvisable to go thirsty to bed, as the soul may go in search of water and be drowned. (Grohmann Aberglauben und Gebräuche aus Bohmen und Mahren.) Meiners C. (Allgemeine kritische Geschichte der Religionen), tells how West India slaves committed suicide, in order that, in spirit, they might live again in their native land. The soul came from God, but in the waking life all connection with the spirit world was lost, and only at night could this association be resumed. This led to the belief in Dämons, and the power of receiving revelation by sleeping in some temple, especially that dedicated to Zeus. (Meiners.)

Marc Aurelius, through dreams, received information of a remedy for personal ills. Gallen was led to study medicine through his father's dream, and allowed himself to be governed by his dreams in the treatment of his patients. (Friedlander L. Darstellungen aus der Sittengeschichte, Roms.) According to Wiedemann (Die Religion der Alten Aegypter), the Egyptians believed the oracle giving gods would appear to them while asleep in their temple. Robinsohn has collected many instances to show the prevalence of belief in dreams. It is not necessary to go so far for evidence, as every person knows some one, who has had special information conveyed to him through the dream agency, and children are not always capable of distinguishing between the real and the dream experience. What stronger proof of the existence of the spirit of a dead friend did primitive man need than that during sleep his own spirit should hold communion with him in the spirit realm?

To this shadowy existence of the individual in dream life, H. Spencer would add the influence of the real shadow. He thinks the savage, when gazing into the water, would observe a reflection of his own person, and of the objects in the immediate proximity; and further, in sunlight, his body would constantly cast a shadow, an exact representation of himself. From these facts he would derive the idea that there is appended to the object an entity which, however, may be separated therefrom. Man would thus reach the conclusion that he was a duality. Dream-life would reinforce the conclusion of the shadow-life, and *vice versa*. Thus the very substantiality of the body would conduce to the belief that all of man is not flesh and blood.

Wm. Stern would add to these the impulse that would be

received from the reverberations of the voice, as reflected by hill and wood. How far these three, Dreams, Shadows, and Echoes, have been factors, it is impossible to determine, but that they may have moved the mind forward on the way to the thought of an after-existence certainly falls within the pale of possibility.

The conceptions of the nature of the soul, and especially of its mode of existence, must also have been cogent factors in strengthening the belief in immortality. The former has been sufficiently exemplified in a previous section. Of the latter it will suffice to say that the after existence was always clothed in the imagery of this life. With the characteristic inconsistency of the early mind, the soul and body were so completely fused that the domain of the one was supposed the sojourn of the other. The tomb became the throne of the soul, and to this fact may be traced the custom of burying with the body all the property of the dead one, with the hope that he might leave his descendants in the peaceful possession of their earthly existence. Dead feasts arose, and the Indian custom of placing baskets of food on the grave, in the belief that the cadaverous inhabitant would regale himself thereon and be satisfied. (Svoboda W. Die Bewohner des mikobaren Archipels. Intl. Archiv für Ethnologie 6 Bd.; Sippert J. Kultengeschichte der Menschheit 2 Bd.; Rohde E. Psyche S. 150 ff. 633.)

To this also may be traced the cult of the dead once so prominent in ancient Greece, India, and particularly China and Egypt. (Rohde E. Psyche S. 229.; Laws of Menu. IX; Holzmann A. German Mythology; J. Grimm Deutsche Rechts Alertümer; Strauss T. Schi-King S. 18. Remisch S. Die Agyptischen Denkmäler in Mirramar.) As the human race advanced in social and political life, and reached a higher stage of culture, the grave became no longer the abode of the departed. With the evolution of the domestic and social ideals, there was evolved a higher and more felicitous destiny for the soul. A Jenseits arose, a fairer zone, generally far removed from the present sphere of activity, which became a Fortsetzung or mere ethnological continuation.

Here, at first, there was no caste distinction, but gradually there was evolved a paradise for the valiant and the strong, while the weakling must find his future abode in a gloomy commonwealth. As civilization advanced to a higher plane, and moral motives became the determining factors of human conduct, it became expedient to make a clearer distinction of the two realms of the after life, and to set up a throne of justice at the entrance to the kingdom of death. Greece with her Minos, and Egypt with her 42 assessors of justice, form the classical examples. From the social sense of right and wrong, and the

moral sense of good and evil, of duty and transgression, there grew up the necessity for reward, compensation for the ills of life, remuneration of the good, punishment of the evil, the equalization of all the injustices of the sensuous existence, an ulterior reward in a Heaven or a Hell. (Grabowsky J. *Der Tod, das Begräbnis* U. S. W. Intl. Archiv. f. Ethn. 2 Bd. S. 186 ff.; Spencer *Sociology* 1 Vol. S. 226; Cronz *Geschichte Von Grönland*. Tylor: *Primitive Culture* 2 Bk. 87. Waitz *Th. Anthropologie* 3 Bd.; Holtzmann *Deutsche Mythologie* S. 198; Hirschfeld, H. S: *Über der Lehren der Unsterblichkeit der Seele bei den Verschiedener Völker* S. 54; Schmiendl *Der Kampf unes Recht* S. 26 ff. Robinson *Psychologie*, Chap. IX. Runze *Psychologie der Unsterblichcerts glauben*.)

Another motive, and one closely allied to the preceding, is the fear of death. This has a positive and a negative element. The positive is exclusively eudemonistic, particularly in regard to the departed, although an egoistic stratum is easily discernible. In the negative there are to be found two psychical dispositions, which are conjointly evolved, but which must be carefully discriminated and kept distinct, viz., fear of the dead and fear of dying (Runze *Psychologie*). The latter is generic, and extends down through the animal series. It is probably nothing more than the physical reaction to pain as indicated above. Through its manifestation Leibnitz and Bonnet have been let to assert that animals have a longing after immortality, and Arnold Ruge to declare immortality to be the disinclination of man towards dying. (Runze, p. 33: *Buckle History of Civilization*.) The very mystery that surrounds death makes it dreaded whilst that same mystery nourishes the immortality germ.

In order to comprehend the potency of the second of the negative elements, we need but remind ourselves that primitive man had the conception that the spirit retained connection with mundane life, influencing particularly for evil, inflicting disease and death upon negligent relatives, and performing all sorts of vampirism. As a consequence, there arose all those multitudinous rites of exorcism and mortuary customs for banning the dead. Mention will be made of a few of these, but it would far transcend the limits of this paper to exhaust them. To begin with the simplest: The Chinese in certain parts of the empire make addresses to the ghost of the departed, entreating it to go quietly to the grave like a good ghost. (J. H. Gray: *China*, pp. 200, 204.) Schoolcraft (*Indian Tribes*, Vol. V, p. 65,) speaks of the prevalence of a similar custom among the Dacotahs, the Karieng and other tribes. This mild fashion did not long meet the emergencies, so more efficient means were employed in dismissing the presumably unfriendly spirit. The

Slavonians pelted the ghost with sticks and stones and often hot coals. (Ralston *Songs of the Russian People*, p. 319.) Bastian informs us that a similar practice prevailed among the Bohemians. (*Mensch in der Geschichte*, II, p. 329.) According to Sonntag (*Todten bestattung*) stones are piled on the grave to keep the spirit down. From Tacitus (*Germania* Kap 27) we learn that the Germans were accustomed to raise great monuments over their dead, as they thought the monuments a burden to the dead. Robinsohn gives a number of people among whom this custom existed, and makes special mention of its use in connection with the burying of murderers.

The wicker-work that so frequently surrounded Indian graves, was originally a device to wall in the malignant sprite. According to Castrien (*Vorlesungen über Finnische Mythologie* S. 122) the Finns and Dyaks were accustomed to thus enclose the burial spot with high, oftentimes sharpened paling. Means other than this have been employed to keep the spirit in its cell. The feet were often tied together, especially the two great toes, so also the hands. Spikes and other means fastened the body in the coffin. The Wallachians drove a nail through the skull, and the Californians and Damaras broke the spine. (Fraser *Jl.*, *Anthrop Institute*, Vol. XV.) Mutilation has been extensively practiced, especially that of cutting off thumbs or hands or feet, in order that immunity might be obtained. In the case of ghosts suspected of vampirism, the body was exhumed, the heart and viscera removed, and the empty hull was then restored to the tomb, or else the whole body destroyed by flames.

Endeavor was also made to barricade the ghost against entering his former home. The simplest was to remove the sick one to some distant place. The Esquimaux are accustomed to transfer their sick to sheds, or especially prepared booths which can be destroyed after the decease of their gruesome inhabitant. Du Chaillu (*Equatorial Africa*, p. 384-385,) informs us that the Bakalin, in Central Africa, drive a sick one not only away from home, but outside of the village. If, however, a sick one should die in the village, they immediately abandon it. The Balondas have a similar custom, if a chief dies. (Wood: *Nat. Hist. of Man*, I, p. 419.)

The Andaman Islanders also abandon a place of death. (E. H. Mann: *Aboriginal Inhabitants of the Andaman Islands*, pp. 74, 77.)

In Russia and East Prussia, an axe was laid at the threshold. In Germany all the doors and windows are shut. Among many peoples, notably the Greenlanders, Norsemen, Hottentots, Bichuans, Samoieds, Ojibways, Algonquins, Lassians, Hindoos, Tibetans, Siamese, Chinese, Balinese, and Figians, special

egress is prepared, and after the removal of the corpse the way is sealed up. (Fraser, *Jl. Anthropol. Inst.*, p. 70, 1885.) The Arancians strew the ground with ashes after the bier has passed (Klemm *Kultengeschichte*, V, p. 51). The Kakhyens scatter the ground with rice. In Germany, modern Greece, and in Cyprus, water is poured out behind the corpse. (Frazer, p. 77.) Scott, in the "Lay of the Last Minstrel," (See III, 13,) barricades the goblin page with water.

The Bohemians put on masks and otherwise disguise their person, so that the spirit may not recognize them and follow them home. (Bastian *Mensch*, II, p. 328.) Plutarch (*Quaestiones Romanæ*, p. 14,) indicates how the mourning customs of his times were the very opposite of life's ways, and every one is familiar with the Chinese custom of dressing in white. May we not see here the psychology of all our mourning customs, namely, an endeavor to "Bilk" the spirit of the departed? The custom of closing the eyes of the dead, blind-folding, the Jewish potsherd, the Russian coin, carrying the corpse feet first, burial by night, all belong here.

Fire has also been employed as a means of interception, especially among the Siberians, Romans, and Chinese, who would have the mourners step through or over fire. (Meiner's *Geschichte der Religionen*, II, p. 300. *Festus: Aqua et igni*. Gray: *China*, I, pp. 287-305.) The Vends use water instead of fire (Hampt. *K. Sagenbuch der Lausitz*, I, p. 254) and the modern Mytilenians and Cretans ferry the body across a stream. (Schmidt: *Das Volksleben der Neugreichen*.)

Numerous other instances might be given, but I have sufficiently illustrated in order to clearly demonstrate what a mighty influence custom has wielded over the human soul.

The reverse side of this double faced shield is the desire to know the dead are happy; a wish that must have arisen very early in the heart of the race; a wish that has to be considered psychologically and historically the origin of dead-feasts, a custom as extended in compass as the one we have just described. The literature of this has been so long before the reader that it is needless to rehearse the matter here. This desire to know that it has gone well with the dead, has led people to bury or burn with the corpse the things dearest to the person while living. It has led to widow burning, as in India; to human offering, as among the Aztecs; to all the oboloses extending from placing money under the tongue (Preller: *Griechen Mythologie*, I, 639,) to a certificate that the dying one has confessed and that the priest has granted absolution. (England *H. Western, Rev.*: *Russia*, V. 140, p. 172.) A wish that is still present in the highest stages of culture, as witness the masses for the dead in the Catholic Church. If we could see these

various practices in their incipient stages, freed from all the intellectual accretions of modern times, we would find therein that same psychic element that we have already designated as the tap root of belief in immortality, viz. : the inability to imagine non-existence, only it has become altruistic. When once the idea has become the dominant ideal of the race, its growth and influence but parallels those of other great psychological and historical ideals, and it has become a potent factor in the individual life in much the same way.

Closely allied to this is the reverence for renowned individuals. It is easy to think of a slave, or a serf, as dropping out of existence, but not so with the leaders of the race. Goethe's words over Wieland are characteristic of humanity everywhere. He says: "The destruction of such high powers is something which can never and under no circumstances, even come into question," Hero worship has prevailed everywhere, and has entailed an undying belief in the continued existence of the hero. Every land has its "Islands of the Blest," in which it installs its great in abundant reward.

Pain of separation and wish for reunion has had its influence, as has also the feeling of need for compensation for the troubles and inequalities of life. The great preponderance of apparent hardship, and wrong, and misfit of life, the constant injustice that is heaped upon the weak by the strong, the burdens that are laid upon those wholly unequal to the labor, all tend to create a hope that somewhere justice must be done. The incompleteness of this life, and the ambitious desires to complete life's tasks, have led to the view that earth is but a school for preparation for future greater usefulness, where the character here begun may be rounded out in all its symmetry and fullness. Ethics, too, has brought its tribute and laid it at the feet of this human ideal. The seducing influence of analogy as drawn from nature; the effect of death itself, which has constantly thrust upon man a score of questions concerning what lies beyond; and, finally, the firm conviction of the existence of a Creator, who is also the preserver of life, the personal realization in him of all that is incorporated in the word "Father;" all these have combined to strengthen in man the firm conviction, that "it is not all of life to live, nor all of death to die."

In more modern times, among more civilized people, these count as naught in comparison with the assurance that the Divine has twice revealed himself to man. Once in the thoughts and lives of the good and great of all ages, and particularly in the Christ, and once in the individual heart, to whom is given in this double manner the two-fold assurance of continued existence. To-day the faith is inseparably joined with the reli-

gious consciousness, and has received therefrom such momentum that the annihilation of the one means the destruction of the other. There are those who hold that immortality is wholly a "gift of grace," others who claim it to be a spontaneous development of mental energy, still others that its germ is found in all sentient nature, and that the full consciousness expressed in man is but the progressive growth of the fundamental germ. Personally I sympathize with the first, *i. e.*, it is a special endowment bestowed upon man when he became man through the introduction of self-consciousness, which carries with it the perceptive and conceptual powers. The second hypothesis is to me unthinkable. It has the possibility of neither logical nor empirical demonstration. The third I conceive to be in no way antagonistic to the first, as it is only a settling of the mode of operation of the laws that have produced this final culmination in man. Nothing comes from nothing. At the same time no man can lift himself higher than he is by pulling at his boot straps. The power that has been operating in nature, impelling her on from stage to stage, is none other than the manifestation of the Will that lies at the bases of the universe, and the hand that has guided the forces has been none other than that of the Divine. That there has been regular progression, few will deny; that it has been the product of blind chance, is a violation of the logic of existence.

### CHAPTER III.

#### MORAL SIGNIFICANCE OF THE DOCTRINE.

A school of thinkers (Positivists) has arisen, who designate the doctrine of immortality an immoral doctrine, in that it tends to give (a) false views of life, (b) to create a spirit of selfish egotism, and (c) to set up a false standard of morality.

In order to test, as far as possible, the religious and ethical content of the doctrine, a special sectional question was added to the syllabus, which questions runs:

V. What influence has belief in immortality had on your life religiously? Has it acted as an incentive to Christian duty, to divine worship, and faithfulness in your devotions, to devote yourself to the work of evangelization, or any other self-sacrificing endeavor? Has it been a means of support, or a source of unbelief in your religious life?

2nd. Morally? Has it led you to a deeper appreciation of self, (b) of others? Has it spurred you on to right actions? Has it led you to be more careful in deciding problems involving right and wrong? Has life's work been more earnest? Has it created in you the spirit of self-salvation or led you to altruistic endeavors? Do you consider it a moral strength or source of weakness?

3rd. In everyday duties? Have you studied or labored the harder? Endeavored to reach higher ideals? Has the hope of a future life lifted

you over difficult places and enabled you to bear life's wrongs? or has it been a weight about your neck? If it were taken out would life lose any of its inspiration?

77 M. and 315 F. declare it to be an incentive to Christian duty; 68 M. and 229 F. find in it a support in worship and in private devotions; 83 M. and 334 F. are upheld thereby in their religious life generally. Only one found it a source of unbelief, and 4 M. and 23 F. fancy it has no influence whatever on their religious life; 4 M. and 4 F. are doubtful; 97 of the aged people find it utterly impossible to conceive of a religion that had no such hope; 50 of those reporting express no opinion whatever on this point. This is probably due to the fact that they were not professors of religion, and consequently could not answer from an introspective standpoint. If religion is to be interpreted as man's relation to the supernatural, then it is very evident why such belief should be considered one of the foundation stones of worship and all religious life.

The question on evangelization, miscarried, as the vast majority of those reporting considered it to mean, not any altruistic Christian endeavor, but entering the office of a public evangelist. 18 M. and 89 F., however, state that this belief has encouraged them in self-sacrificing endeavors, while 3 M. and 43 F. find it to have exerted no such influence.

A few typical replies are :

F., 26. Belief in immortality has certainly made life more religious, been an incentive to Christian duty and to divine worship. It has not led to devotion to evangelization, but it has to other self-sacrificial endeavors. It is surely a great religious support.

M., 21. The belief in immortality has been a veritable check-rein to me. If it were not for such faith I would not attend divine worship.

F., 28. Immortality has always seemed as real as my life, and I am thus unable to measure its influence. It has been an incentive to all right action.

F., 17. My belief in my duty to God rather than immortality has been the great support of my religious life.

It is possible to conceive of religious feelings divorced from the supernatural and devoted to humanity, or some other intra mundane object. For such, the doctrine of immortality have no weight, but for all those who find the supernatural rather than the positive religion the true ideal of life, immortality will always act as a transfusing and vivifying power, creating a social medium favorable to the growth of philanthropic feelings and endeavors.

To the question concerning the moral significance of the doctrine, 33 M. and 173 F. believe it has led to a deeper appreciation of self, and 55 M., 206 F., of others. No definite comparison can be made of its influence in creating a spirit of selfishness or of altruism. Constantly does one find the two



associated. The unanimous testimony is: "Belief in immortality has led me to a deeper appreciation of self but at the same time of others also. It has influenced me to endeavor somewhat for their salvation." It is very significant that of the total number reporting, but 3 M. and 21 F. mention self-salvation alone; 26 M. and 114 F. couple self-salvation with the salvation of others; 53 M. and 168 F. lay emphasis upon the altruistic resultant. Quite frequently does one meet the expressions: "This belief has created in me the desire to become a nun, a missionary, to labor for the poor, to fit myself so that I may properly influence my pupils, to strive to do something for the cause of Christ, to endeavor to elevate mankind and brighten life."

Among those reporting the consequent has been anything but the engendering of a selfish spirit. Rather has a deepened and broadened appreciation of human life flowed therefrom. It is very clear that belief in immortality has not been the only factor operating in the consciousness of those reporting. They have widened the term so as to make it synonymous with the religious consciousness, so that the fruits reported are the production of a tree with many branches. This does not vitiate the results, as the charge of selfishness is laid at the foot of religion itself. One must conclude from the data in hand that this doctrine is one of the main factors in social leaven.

67 M. and 216 F. pronounce it an incentive to right action. 67 M. and 247 F. declare its influence in determining them to be more careful in deciding problems involving right and wrong. 69 M. and 233 F. think it makes life's work more earnest. 93 M. and 339 F. have no hesitation in pronouncing it a source of moral strength. 2 M. and 4 F. consider it a source of moral weakness. 7 think it neither, and 21 M. and 35 F. are doubtful, or gave no opinion. Among those reporting one must conclude that belief in immortality is a great moral lever. 600 cases are not very numerous, but if one may add thereto the testimony of history, as well as the experience of life, one may be safe in generalizing. There have always been found those whose sole aim was to save their own little soul, and having accomplished this, as they thought, they neglected the great world of humanity outside themselves, or have centered all upon the world to come. Because there has been such a tendency in some quarters to disregard the affairs of life, it does not follow that the doctrine of immortality is intrinsically bad. Misinterpretation has been the sequestering agent. But, even suppose it did occasionally lead to cloisteral life, it would not be a thing so very immoral.

Replies:

F., 17. My belief in immortality has led me to a deeper apprecia-

tion both of myself and of others. It has always spurred me on to right actions and led me to be more careful in deciding problems involving right and wrong. Often I wanted to do the wrong, but the thought of eternal consequences always influenced me in the right. My whole work in life has been more earnest. It has created in me the spirit which has led me to seek the salvation of others: I certainly consider it a moral strength.

F., 18. My belief in immortality has been an incentive to all that is good, but as I grow older and my experience widens I feel that to do right for right's sake, is the true spirit of mankind. Immortality, however, still remains a fundamental motive. It is to me a moral strength.

M., 24. Because of this belief I am endeavoring to lead a morally pure life. I certainly am more altruistic and morally stronger therefore.

F., 45. I find myself strengthened in every way by such hope.

M., 29. I do not see how there could be any genuine moral life without such.

This problem leads right into the very heart of the ethical life. Man's actions are the result of motives, and the question—what is the final aim or highest good? becomes a vital one. The schools of thought are divided. The subjective school would make the end of moral conduct a subjective state, either hedonic or eudemonistic. The objective school would set up a standard outside of the individual, such as perfectionism, evolutionism, naturalism, utilitarianism, duty for duty's sake.<sup>1</sup> The standard by which the moral worth of dispositions and actions are measured is (1) the moral law within, or (2) the effect of the act upon the welfare of all whom it reaches.

Our interest lies in the *motive* rather than in *criticism*. Here, too, thought is divided. One class of thinkers says the motive must lie outside the individual; *i. e.*, it must be authoritative and autonomous. The other school lays the stress upon a priorism and empiricism. The returns would justify the former. They show that the impelling force is the thought of responsibility. This does not necessarily exclude the performance of duty for duty's sake, but rather intensifies the idea of duty. A no less authority than Mallock<sup>2</sup> denies the validity of such language as virtue for virtue's sake, honest because honesty is the best policy. In his essay, which is a defense of the religious basis of morality against the charges of the positivists, and atheists, he shows that virtuous men are virtuous simply because virtue brings them something they desire which appeals to them as the highest aim of the supreme good. In the same way, vice is evil, because it entails loss. Thus, the ultimate aim of morality is happiness, and the question is, whether that happiness shall be confined to the sphere of earthly existence, or be extended to all existences. More specifically can human

<sup>1</sup>Paulsen: Introduction to Philosophy.

<sup>2</sup>Is Life Worth Living?

life, cut off from all future existences, supply the one thing indispensable to human happiness. That there have been found a few souls, who saw in humanity the good of human endeavor, must be confessed. Among those reporting, one says that life without the hope of immortality is to him still worth the living.

It would not be difficult, however, to show that loss of the sense of unending life has led to a lower standard of morality. The writer knows a young man whose early training was carefully religious. His early life also gave promise of an active pulpit career. In the course of college and university life he imbibed the doctrines of free thought, and finally of naturalistic determinism. To-day, his standard of life is positively immoral. He has become intensely selfish, and is a firm believer in free love. Findley (*Memorials of Prison Life*) states that in the confessions of many of the prisoners they attribute the beginning of their downfall to casting off a sense of future responsibility. The cases might be multiplied by the hundred. The problem is one that cannot be settled by numbers. There are too many individual elements. As stated above, some grand souls have cast off entirely the hope of an objective future existence, while some of the most debased creatures have had the firmest belief in a personal immortality. The worth of a doctrine lies first, in its fidelity to truth, and second, in its power to enforce its truth upon the heart of the actor. The morality of an action consists in the motive thereto being its own justification. If the doctrine of immortality intensifies life so as to make all of its motives to lead to self-justificatory action, then it cannot be charged with immorality. If, however, it tends to separate the motive and the justification or make the motive the product of the justification, then it loses its moral significance. In the opinion of the writer it belongs to the first class.

These returns also open up another interesting problem that cannot be discussed here, viz., individualism versus socialism, and suggest that the higher appreciation of the individual usually means a deeper insight into the profounder significance of the social life. The moral estimate one puts upon himself usually determines his estimate of his fellows. The higher view is probably correct which sees in the highest development of the individual the greatest good to society.

The problem of immortality has also had its influence upon the duties of every-day life. 11 M. and 92 F. find themselves encouraged thereby to a more thorough performance of the duties of life. It formed for them a sort of background for craft-integrity. 5 M. and 8 F. aver that it has had no such influence. 75 M. and 273 F. have thereby striven for higher ideals. 54 M. and 217 F. have found the hope a support in life's troubles. 1 F. has found it a hindrance, while 2 M. and 8 F.

are doubtful about its influence. There is thus clear testimony to the worth of the belief even upon the lower plane of activity.

A question was added to discover its general psychologic worth in life. It ran: "If it were taken out would life lose any of its inspiration?" 134 M. and 431 F. give a clear affirmative. 4 M. and 7 F. are in the valley of indecision. 3 M. 7 F. vote in the negative. A score gave no voice either way. These figures do not testify to the worthlessness of earthly existence, but to the worth of such existence when interpreted in the light of a higher possibility.

A few extracts are:

F., 16. My belief in the immortality of the soul seems to compel me to study and work faithfully. I am constantly seeking some means to reach my ideals. Trouble fell upon me, but the hope of the future helped me to bear up. If this belief were taken out of my life, I am afraid my existence would be one long dread of the end, a vain attempt at happiness.

F., 21. Immortality has been a great spur to me both morally and intellectually, and has encouraged me in times of difficulty. Life would lose nine-tenths of its inspiration, if my belief were taken from me.

F., 45. Immortality has always been a great encourager to me. If the hope were taken away life's inspiration would be gone and I should not care to live.

F., 18, who once believed in immortality but does so no longer, says: "When I had this hope life was sweet and worth the living, now it ends in darkest night and gloom."

M., 21. Life seems just as worthy without it, though annihilation is repugnant emotionally.

M., 32. Immortality has been no weight about my neck, but rather a life preserver. With it would go all of life's inspiration, and I should live not to crucify, but to gratify the appetites of the flesh.

M., 36. I am sure I could be quite indifferent as to men's throwing their lives away, if I thought these lives were such a bauble as the men themselves appear to think them. Life certainly would be a very imperfect and insignificant existence without the hope of a higher and more perfect sphere of activity.

M., 31. Belief in immortality has been to me a source of strength and encouragement, a stimulus to higher efforts and an incentive to do each day's duties not only for themselves, but for the part they are to play in preparing me for the inscrutable purposes of my existence. It seems to me that if it were taken out now, life would not lose so much of its inspiration, but whether I could ever have reached my present condition without it as an incentive, I am in doubt.

The aged people, with the exception of 5, were unanimous in confessing the belief in immortality to have been one of the most potent factors, operating on the development of their ethological nature. Some commend it as the supreme. Some of the expressions employed were: "Exerted a great influence." "The controlling influence." "Moulded my life." "Tremendous influence." "Foundation of life's endeavor," etc., etc. Their testimony corroborated that given by the younger people in the written replies. The study of Mr. Scott on old

age and death went to show that belief in immortality declines with increasing years. (*The American Journal of Psychology*, Vol. VIII, pp. 67-122.) The present study would show that it is deepened and intensified.

Two specific accusations have been laid against the ethics of an eternal existence. (1) Being hypothetical and undemonstrable, and therefore presumably untrue, it induces a false life, because, based upon a myth or mere infatuation, it makes that life, whose chief motive is drawn therefrom, a lie, which is the most immoral of all immoral things. To state this objection is practically to answer it. Its validity rests entirely upon the truth of the hypothesis. Now in our former sections it has been shown that, while there is no innate idea of immortality, there is equally in nature no absolute proof of the falsity of the teaching. Since science cannot deny the possibility of continued existence, it becomes pure arrogance to do as the positivist has done, *i. e.*, declare immortality a fable. Since one, therefore, cannot know empirically the certainty or uncertainty of this doctrine, one cannot characterize it as moral or immoral in the above specified sense.

The second charge is possibly a more legitimate one, namely, it is conducive to the spirit of selfishness. That there have been numerous instances of individual selfishness, resulting from an obscure perspective of the deep significance of continued existence, will be readily admitted. That selfishness in its mass representation, *i. e.*, as seen in humanity, even among Christian people, is the product of such an ideal, is emphatically denied. It is but the bitter fruit of naturalism. If in evolution alone we have hope, then we are most miserable, for there is then an end to all morality, since the "survival of the fittest" means simply survival is fitness and morality becomes utilitarianism.

It is not, however, in this sense that the positivist is thinking of selfishness, but rather in this that it tends to concentrate the efforts of the individual upon the life to come and its ulterior rewards, and the means of fitting one's self personally therefor and thus inducing a disregard for the individuals and the interests of this life. He makes the still more explicit charge, that to desire personal consciousness in perpetuity is selfish. No serious attention need be given to this latter as it enunciates a principle that would in its strict application annul all existence. It is certainly not immoral for one whose life is full of meaning, to desire an existence of years rather than one of days. If it be legitimate to cherish such hope for three score years and ten, why should it not be so for an endless ion. I confess with Davidson (*Int. Jl. Ethics*, Vol. III, No. 3, p. 347.) that to be "content with the prospect of annihilation seems to

me base pusillanimity." Huxley could say: "I confess that my dull moral sense does not enable me to see anything base, or selfish, in the desire for a future life among the spirits of the just made perfect, or even among a few such poor fallible souls as one has known here below." (Modern Symposium, p. 62.) This phase of the question may be dismissed as a mere sentiment. The former portion of the charge is more serious. The moral worth of a doctrine consists in its effect upon human action. Now if the doctrine of immortality turns man's gaze from earth to heaven, creates in him a disregard for the duties of life, and instills in him indifference to the terrestrial existence, then it would have been better had it never come into the world. There is abundant historic evidence to show that such has been the consequence in some quarters, and among a certain class of believers. It can, however, easily be demonstrated that this is the product of a superficial interpretation of what it means to be immortal. The doctrine of immortality must necessarily enlarge the horizon and thereby lessen the importance of purely earthly existence, just as the extension of astronomical knowledge has placed our planet in an entirely different scale of value, in its relation to the universe. But while it has taken away with one hand, so to speak, it has given liberally with the other, so that the motives of life, even earthly life, are thereby multiplied. The truth is, this doctrine is joined to another equally significant, in which and through which it receives its legitimate interpretation, viz.: "Whatever a man soweth that shall he also reap." The deep inner consciousness of immortality does not disconnect the two worlds. It makes all existence one, and plenitude of being, to borrow an expression from Davidson, the ultimate end of existence. Now plenitude of being does not consist in sensuous gratification. Its realm is the spiritual, the intellect, the emotions, the will (Ethics of an Eternal Being: Davidson), and its instruments are all the exigencies of life, and its goal is goodness.

It sees in humanity the chief agency for reaching this ultimate end, so that whatever prepares humanity for a better state here helps to prepare for a better condition hereafter. Thus altruism and egoism are merged into one by this higher perspective. The law of the immortal life is the law of love, and its condition is true being.

#### CONCLUSION.<sup>1</sup>

The path through which we have come seems to lead to the following deductions:

1st. The soul has a growth that closely parallels that of the body.

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<sup>1</sup>In order to reduce this paper to the limit of a Journal article, it has

2nd. The concept, immortality, has a growth that parallels that of the race.

3rd. Its origin, so far as this study goes, is the product of the psychic activities of man himself, and not the fruit of a body of innate ideas. This does not imply, however, that there is not some deep, fundamental instinct, which may have been the dynamic power impelling him to such conclusion.

4th. Science can give no absolute proof either for or against the teaching.

5th. Neither can psychology publish any ultimatum on the question, though it is clear that the conception of an immaterial entity in the philosophic sense must be abandoned.

6th. The testimony of the race consciousness would go to establish the validity of such a hope, but, as has been pointed out, this consciousness may be the product of biological factors, which in their gradual unfoldment have produced this dominant ideal in man.

6th. No importance can be attached to the phenomenon of spiritualism, as it is so constantly associated with fraud, and most of its manifestations that are not the product of deception can be explained clearly and satisfactorily by well established psychological principles. Neither can the mysteries of hypnotism, telepathy, and clairvoyance be adduced in support of the doctrine, only so far as they show the great complexity of personality.

8th. In the returns much mention is made of the testimony of an inner revelation giving clear evidence of the truth of personal continuity. It is possible to explain this psychologically as the accumulated heredity of countless ages, joined with the ontogenetic longing for perpetuity. Until it can, however, be shown that there is no teleology in the world, and that there is no Divine hand at the helm, such testimony must be accepted, though it cannot be empirically established.<sup>1</sup>

9th. The ethical worth of the doctrine cannot be impugned, though a superficial comprehension of it has often engendered a spirit conducive to the best interests of neither the individual nor the social body.

10th. We are led right into the heart of religious pedagogy,

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been found necessary to omit entirely a chapter on the growth of the belief among the Aryan and the Semitic peoples—particularly India, Jewry, and Egypt, a chapter on the various forms the belief has taken in the folk consciousness, in metaphysical and in scientific circles, and a chapter setting forth and discussing the arguments *pro* and *con*.

<sup>1</sup> Prof. James's recent monograph on Human Immortality points out how such consciousness can be intensified even through present physical agencies, and indicates a scientific basis for inspiration. This little book is the Ingersoll lecture for 1898, and appeared after the preparation of this paper.

and the one principle standing clearly to the fore is the growth of the individual paralleling that of the race. It does seem that the history of humanity on its way to psychical and religious enlightenment forms the point of departure for the modern instructor.

The question of religious pedagogy offers one of the most perplexing problems in the educational field. It does seem that present methods produce very undesirable and too often profitless results. The gross, erratic, abnormal conceptions of the soul and of heaven, which smack of the rankest materialism, as is shown in the returns, too often become fixed. They are as far from the probable truth as anything can be, and while we shall never know the exact nature of either of these, yet it seems an act of guilt on the part of the religious instructor to allow the growing imagination to be burdened with such conditions.

The question arises, what shall be done? This can best be answered by considering what is being done, *i. e.*, the methods now employed to develop the religious conscience.<sup>1</sup>

1st. There is the method of keeping from the child all knowledge of God, soul, heaven, until such times as his intelligence has gained sufficient strength to comprehend these in their essence. The objection to such method is that it makes faith a matter of the head rather than the heart. It is believed that the religious consciousness is a growth just the same as the other emotional manifestations of man, and, further, that it has its root in instinct. Now to make an instinct permanent, habit or use must enter, hence this method would fail entirely to utilize the golden moment.

2nd. There is the instruction method, which considers certain truths necessary for the child's salvation, and the sooner these can be injected into the child's brain the better. Though popular, this method violates all laws of growth, for it would produce men before boys.

A third, and perhaps more vicious method, is that which believes the child and youth must "sow his wild oats," or to put it into another form, he must know evil before he can be good. Consequently he is allowed to follow the devices of his own heart in order that the church may have the extreme pleasure of effecting his conversion in later years. Such method can find no pedagogical justification whatever, either in principle

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<sup>1</sup>The reader is referred to two papers by Dr. A. C. Ellis in which many suggestions bearing on this problem will be found. (1) Sunday School work and Bible Study in the Light of Modern Pedagogy. *Pedagogical Seminary*, Vol. III, No. 3. (2) Suggestions for a Philosophy of Education. *Pedagogical Seminary*, Vol. V, No. 2.



or in practice, as it allows the formation of vicious habits of action and thought which a life cannot uproot.

What shall be done? Never let the child lose the animistic conception of the universe. Some method must be found for a unification of cold scientific fact and myth. He must be given the purest possible concreteness, but only so far as the exigencies demand. In our eagerness to teach wide we destroy all. The child constitution cannot form abstractions, and if we persist in presenting him with metaphysical conceptions, we may expect him to transmute them into concrete absurdities. We must conform to the laws of the growing mind and soul, and scrupulously observe the commonplace adage—never teach as a fundamental truth anything which will have to be unlearned.

Moral instruction should precede special religious, if the history of the race is to be our guide. Further, religion is only a transference of our thought for humanity and of our attitude thereto to God. It is the *love for mother* transformed into *love for God*. We must then get back to the Pestalozzian principle of making self-activity the basis for religious instruction as well as for the secular. What is actually needed is an analysis of the religious environment and an orderly consecutive arrangement of the material that it may lead to positive, definite ends, and an adaptation of this material to the stages of soul development.

Froebel's dictum that the child mind ripens and unfolds to the abstract only through the concrete has deep significance here. It would not be difficult to apply, as the home, the field, the forest, all furnish the necessary concrete material. We need a religious "*A, B, C, of Anschauung.*" God should first be presented to the child as a worker, and after as a revealer. Does not all this material suggest that the natural, normal growth of the child is through this gross materialism into a purified faith in God, soul, and immortality? May not the pedagogical question, then, be one of gratifying this longing of the growing soul by the purest, best concreteness, or as President Hall aptly says, should not the pedagogy of the ego follow discussion of the crude soul ideas of children savages?<sup>1</sup>

#### ACKNOWLEDGMENT.

In all this work I have incurred a great debt of gratitude. To President Hall for continuous aid and sympathy; to Dr. Burnham for numberless suggestions; to Dr. Chamberlain for many anthropological references and hints; and in various ways to the other members of Clark University. For returns, to many personal friends who wrote personal letters; to Miss

<sup>1</sup> *American Journal of Psychology*, Vol. III, p. 378.

Williams, of the Trenton, New Jersey Normal; to Principal Purington and Miss Smith, of State Normal, Farmington, Maine; Prof. Luckey, State University, Lincoln, Nebraska; Dr. Chrisman, Kansas State Normal; Principal Harrington, Wilton Academy; as well as to those mentioned in the body of the article.

## AMUSEMENTS OF WORCESTER SCHOOL CHILDREN.

By T. R. CROSWELL.

Educators are coming more widely to recognize that development following nature's laws is not always a steady growth in one direction, but often by sudden starts and rapid shoots at what are termed the nascent periods. They also recognize that, to guide the formation of true men and women, they must know more of what these nascent periods are, of what the natural tendencies of the child are in the normal process of his development. Such beliefs have led to the many attempts to study in a variety of ways the natural interests of children. The present study is but another such attempt based on the belief that the spontaneous activity of the child affords the best opportunity for the investigation of interest. It is not expected that the most careful study of the outward expression of the life of a limited number of children can settle the problem of children's interests; but we believe that this study, touching as it does the lives of several thousand children now attending our public schools, may serve some as a rough criterion of their work, confirming in many cases the results of general observation and honest experimentation, and in other directions pointing just as directly toward vital errors. Not only will it serve as a criterion of value, but will also contain many hints to the thoughtful teacher for special devices and methods of teaching.

This paper, originally intended as a preparation for a more extended study (which may yet follow), is based almost entirely upon the answers of some two thousand children in the public schools of Worcester, Massachusetts, to questionnaire No. VIII, issued in the fall of 1896 at Clark University. But these answers have been confirmed, as far as possible, by comparison with similar studies of about the same number of pupils from other localities, by the extended reading along this line, and by general observation. For the generous aid received, the writer feels under the greatest obligation to all contributors, and especially to the hearty co-operation and encouragement of Supt. C. F. Carroll, and of those principals and teachers who so kindly furthered the work in Worcester.

These returns, in round numbers, from about one thousand of each sex, include all grades from the kindergarten up to

and into the high school. They are from seven different schools, so selected that about a third of the children are of Swedish parentage, one-fourth of American parentage, and the rest are about equally divided between the French Canadians and Irish, with a slight sprinkling of other nationalities. The questions were intended to recall as far as possible each child's own experience without suggesting particular answers. In order to call out the various reactions of the child, the questions were put from a number of slightly different stand-points. For the most part the answers bear the stamp of originality and truthfulness.

In collating this material three general heads have been followed :

1. A study of the *variety* and *character* of the *games, toys*, and other *amusements* of the child. In brief a tabulation and study under a general head of all the things mentioned in the answers to the following questions.

#### TOPICAL SYLLABI FOR CHILD STUDY.

(Series for Academic Year 1896-7.)

##### VIII. SPONTANEOUSLY INVENTED TOYS AND AMUSEMENTS.

*A. For Children.* (Teachers are requested to ask their pupils to answer this part of the syllabus.)

Write your (*a*) name, (*b*) age, (*c*) sex, and (*d*) state whether you live in city or country.

I. What toys or playthings do you use most (*a*) in winter, (*b*) in spring, (*c*) in summer, (*d*) in fall?

II. What games and plays do you play most (*a*) in winter, (*b*) in spring, (*c*) in summer, (*d*) in fall?

III. Which of these are (*a*) your favorite playthings, (*b*) your favorite plays? Do you use most the toys and games you like best? If not, why not?

IV. Name other (*a*) games, and (*b*) playthings which you used when younger. Give age at which each was used most. Show your choice as above.

VIII. Describe any games you or your friends have invented. How long did you play them before giving them up? To what extent did other children imitate them?

IX. What do you play, or how do you amuse yourself (*a*) when alone? (*b*) When only two or three are together? (*c*) When more than three?

X. What do you do for amusement evenings?

XI. What games do you play on Sunday? What else do you do to amuse yourself?

2. A more careful study of question IX, *i. e.*, a study of the influence which special conditions of environment may exert.

3. A study of the creative work of the child when left to himself. Based upon answers to the following questions:

V. Describe any plaything, no matter how poor, which (*a*) you have ever made, (*b*) your friends have made.

VII. Describe anything you have repeatedly attempted to make, or wanted to do, but did not know how.

Below the fourth grade, owing to the difficulty in written expression, little was attempted beyond the answers to the first three questions. Those from the kindergarten and first grade were obtained by careful inquiry on the part of several teachers who very kindly took upon themselves the labor of writing down the statements of their pupils.

The 2,000 children mention over 700 different means of amusement.<sup>1</sup>

About 100 of these are sedentary games (chiefly cards), and 150 are with toys and common objects used as toys, which would tend to sedentary habits; 225 are active games or sports; 85 are such pastimes or employment as do not belong distinctively to any of these classes; while the writer was unable to find out even the nature of 130. 272 of these amusements were common to both sexes, 182 are mentioned by the boys alone, and 197 by the girls alone.

It has seemed best, however, to attempt to classify the amusements according to their most prominent function in the development of the child,<sup>2</sup> and to present the list at the beginning

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<sup>1</sup>Space does not permit a description of these various amusements, but the works referred to at the close of this article describe the majority of those which are neither original or purely local.

<sup>2</sup>Although the classification given in Groos's *The Play of Animals* seemed to me very unsatisfactory and incomplete, that in his later work, *Die Spiele der Menschen*, is by far the most philosophical that I have seen, and had it appeared earlier it certainly would have influenced greatly my own work. However, as my manuscript was already in the hands of the printer, it seemed best to call attention merely to the main points of his classification. Assuming, as I have done, that the function of play is development, Groos has made two main divisions of the play activities: In the first, those instincts tending toward the physical and mental development of the individual, find expression; in the second, those tending toward social development. (I. Triebe erster Ordnung oder spielendes Experimentiren. Solchen Trieben, durch deren Einübung das Individuum zunächst einmal die Herrschaft über seinen eigenen psycho-physischen Organismus gewinnt, ohne dass dabei schon die Rücksicht auf sein Verhalten zu anderen Individuen in Vorgrund stände. II. Die spielende Bethätigung der Triebe zweiter Ordnung. Solchen Trieben, die gerade darauf ausgehen, das Verhalten des Lebewesens zu anderen Lebewesen zu regeln). The first division is subdivided into three main groups, treating respectively of the exercise through play, of the sensory, the motor, and the higher psychic instincts of the individual. The second division has four main groups: Contests, Love Plays, Imitation Plays, and Social Plays. The last group, however, seems to me to be rather an extra emphasis given to the main characteristic of the preceding three, than an exclusive group. Although, perhaps Groos's classification is more logical and philosophical than my own, the reader would, I think, find greater difficulty in applying it successfully to the list of activities here presented.

of this study. Accordingly, in one main class are placed those activities, aiding most directly in the motor development; in the other class those productive of general idea not distinctively motor. These main divisions have been subdivided into groups more or less artificial, but serving to place before us kindred activities of the child, and thus affording a means of mass comparison. After every attempt at identification more than 125 different games must be left unclassified. However, as the most of these are not mentioned by more than one or two different persons, they have little bearing on the comparison of groups, though as indicating the great variety of amusements found among children similarly environed, they have considerable interest. A separate division is also made for those amusements reported by the children as played only when they were younger.

The general form of presenting each group is in three paragraphs; the first containing amusements mentioned by both boys and girls, the second by boys alone, the third by girls alone. In these paragraphs the amusements are arranged for the most part in the order of times mentioned in the returns, and after each game are numerals giving its standing, thus: Tag B 356-73, G 442-93, shows that 356 boys out of a total of 1,000 speak of playing tag, and 73 of these 356 considered it a favorite, while 442 girls out of 929 play it, and with 93 it is a favorite.

## A. AMUSEMENTS PRODUCTIVE OF GENERAL IDEAS.

### 1. Original Make-believe Games.

Play House B 59-5, G 365-54; Play School B 69-1, G 257-32; Play Horse B 166-26, G 47-3; Play War B 55-3, G 8-1; Play Fire B 41-9, G 3; Play Church B 4, G 9; Play Sunday School B 4, G 10; Santa Claus B 4, G 3-1; Salvation Army B 4, G 6; Dress Up B 3, G 6; Policeman B 15-1, G 2; Farmer B 3, G 1; Milkman B 1, G 3; Doctor B 1, G 1; Indians B 10-1, G 1; Bear B 13 "when younger," G 13; Pig, including "Pig Pen" and "Pig Stabbing" B 4, G 3; Fish B 1, G 1; Toll Gate B 3, G 1; Show, Circus, etc. B 4, G 7; Horse Car B 1, G 1.

*By Boys Alone.* Play Ice Cart 10, Ragman 3, Peddler 1, Judge 4-1, Mail Car 2, Shoemaker 1, Library 1, Dutchy-Greenhorn 1, Clown 1, Daddy 1, Dungeon 1, Clubroom 1, Robbers 2, "Deliver your Goods" 2, "There's a Burglar in the Parlor" 1, Wildmen and Tiger 1, Buffalo 1, Indians and Wild Horse 1, Indians and Cowboys 4, Indians and Robbers 1, Monkey 3, Training 1.

*By Girls Alone.* Play Parties, Tea Party, Doll Party 5, Theater 5, Giant 2, Postman, Stage Coach, Fairy Queen, Prince, Lady, Dressmaker, Milliner, Marching, Band, Queens, one each.

### 2. Play with Toys.

Dolls B 39-6, G 621-233; Teaset B 8, G 242-73; Doll Carriage B 5, G 233-80; Doll Furniture B 3, G 79-30; Doll Cradle B 1, G 131; Doll Table B 1, G 15-1; Stove B 1, G 15-3.

*By Girls Alone.* Doll Bureau 16-4, Doll Piano 8-4, Dolls' Clothes 3, Flatiron 5, Washing Set 1, Sewing Box 3, Doll House 3-1, Doll Swing 2, Doll Slippers 1.

Horse B 17-1, G 4; Sheep B 2, G 1; Dog B 2, G 1. The following are mentioned by Boys alone, although several girls speak of having played with such toys at an earlier age. Elephant, Crocodile, Monkey, Wooden Pig, one each. Wagon, Express, and Dump Cart B 188-35, G 7; Train, Engine, Cars, B 21-5, G 8; Blocks B 37-7, G 9; Pea Blower B 15-1, G 1; Balloons B 4, G 1; Windmill B 2-1, G 2; Whistles B 35-6, G 3; Drum B 31-8, G 3; Harmonica B 15-5, G 4; Horn B 9, G 3; Rattle B 1, G 1.

*By Boys Alone.* Guns (wooden) 17-3, Knives 17-6, Swords 12-11, Whip 7, Reins 5, Toy Soldiers 2, Flag 1, Cannon 1, Boat, Ship 35-3, Water Wheel 4-1, Water Hammer 2-1, Jumping Frog 3-1, Fighters (clothespin) 3, Jumping Jack 2, Pop Gun 1, Squirt Gun 1, Dice 7-1, Clapper 7.

*By Girls Alone.* Jack-in-the-Box 2, Toy Watch 1, Wooden Hammer 1, Horse Car 1.

### 3. With Common Objects Used as Toys.

Dog B 36-5, G 11-3; Cat B 17-2, G 9-1; Horse B 4, G 3; Baby B 2-1, G 3; Leaves B 75-2, G 112-6; Flowers B 32-1, G 102-1; Horse Chesnuts, "Horse Cobbles" B 85-5, G 7; Nuts, Nutting B 48-1, G 28; Trees, Climbing Trees B 25-1, G 11; Apples B 18, G 8; Berries, Berrying B 16, G 6; Picking Fruit B 5; Acorns B 3, G 19; Sap B 1, G 1; Eat Food B 1, G 1; Hot Cross Buns B 1, G 1; Hay, Playing in Hay B 20-3, G 18; Grass B 31, G 8; Sand Dirt B 21, G 18; Sticks B 18, G 12-1; Stones B 12, G 13; Water B 8, G 3; Fire B 5, G 1; Tin Cans B 9, G 7; Tin Dishes B 3; Trunk B 4-1, G 3-1; Bells B 3, G 3; Box B 1, G 3; Buttons B 3, G 2; Matches B 4, G 3; Pail B 3, G 3; Soap Bubbles B 1, G 3; Clothespins B 1, G 1; Broom B 1, G 1.

*By Boys Alone.* Pigeons 5, Pigeon Flying 1, Birds 2, Parrot 1, Poultry Show 1, Toads 4, Frogs 1, Rabbits 4-1, White Rats 2, Cows 2, Goats 2, Living Animals 2, Pigs 1, Lanterns 9, Valentines 8, Jack-lanterns 7-1, Fireworks 4, Pot 2, Bench, Bicycle Buttons, Blank Cart-ridges, Crowbar, Boots, Cartwheel, Wheel, Dust-pan, Fork, Toothpick House, Strops, and Spool of Thread, one each.

*By Girls Alone.* Mud, Mud Pies, etc., 24-2, Clover, Oakballs, Oranges and Pears, one each; Lamp, Candles 5, Basket 4, Rocking Chair 4, Jacket 2, Parasol 2, Spoons 2, Stamps 2, Bottles, Cap, Coal-hod, Fans, Mother's Skirt, Pillow, Screen, one each.

### 4. Occupations Common Among Children.

#### IN-DOOR.

Books, Reading B 83-7, G 108-22; Studying B 2, G 3; Camera B 7-2, G 1; Drawing, Painting, etc., B 22-2, G 9; Blackboard B 2, G 13; Pencil B 2, G 3; Ruler B 1, G 1; Slate B 6, G 15; Paper, Paper Cutting, Colored Paper B 4-1, G 4; Desk B 1, G 3-2; Talking B 7, G 7; Tell Stories B 4, G 12; Riddles B 4, G 7; Singing B 11-1, G 22; Musical Instruments B 20-4, G 60-10; (of these the following are mentioned specifically, Piano B 6-1, G 51-9; Violin B 5, G 1; Banjo B 1, G 1; Flute B 3; Music Box, Melodeon, Harmonica, Accordion, and Zither, by one boy each; Apollonia Harp, Autoharp, Mandolin, by one girl each;) Dance B 4-2, G 15-3; Parties, Social B 4, G 6; Carpentry, Tools, Tool-box, Saw, Hammer and Axe, etc., B 41-6, G 3; Jack-knife B 12-2, G 1.

*By Boys Alone.* Printing Machine 5-1, Typewriter 3; Debating Club,

Go to Public Lectures, Library, French Book, Bookkeeping, one each; Jig Saw 5, Leather and knives 1, Building Log Cabins 1; Electric Battery 3, Electric Toys 2, Electric Pulley, Experiments in Electricity or Chemistry, Telephone, Run a Stationary Engine, one each.

*By Girls Alone.* Writing, Writing Letters 5, Assume Characters and Charades 4-1, Practice Reading, Recite Poetry, Spell, Study Catechism, one each; Microscope. Scales, Theater, Opera 3, Play with Boys 1, Fancy Work 15-1, Crochet 15, Sew 19-1, Patch Work 1-1, Make Candy 4, Pop Corn 2, Stove 2, Clean and do Chores 1, Collecting Tintypes.

OUT-DOOR.

Shovel, Hoe, B 61, G 12-1; Rake B 12, G 3; Wheelbarrow B 18-1, G 2; Gardening, "Tend my Plants," "Plant things in Spring," B 6, G 6; Walks, "Go to Walk" B 14-2, G 25-2; "Go to the Woods to have a Good Time," "Romping in the Woods" B 2, G 1; Camping Out B 2, G 2-1; "Fresh Air," "Shovel Snow for an excuse to get out" B 1, G 1.

*By Boys Alone.* Butterfly Net 2, Catch Bugs 2, Whooping 2, Collecting Eggs 1, Peddle Papers 1.

*By Girls Alone.* Lawn Mower and Hose 2, Picnicing 2, Play in the Sun 2, "I go away for amusement," Go out with the Baby, Dig Potatoes, Look at Birds, Go Shopping, one each.

CARDS.

Cards B 163-34, G 151-51; Old Maids B 38-12, G 73-20; Authors B 28-2, G 50-10; Peter Coddles B 2, G 15-3; Robinson Crusoe B 8-3, G 7-3; Snap B 6-2, G 8; Anagrams, Letters, Spelling Game B 8, G 5; Napoleon B 6, G 1; Lost Heir B 7-1, G 1; Chicopee B 7, G 1; Bible Game B 2, G 5-1; Dr. Busby B 3, G 3; Christmas Goose B 1-1, G 5-4; Cinderella B 3-1, G 3; House That Jack Built B 3, G 2; Jack the Giant Killer B 3, G 1-1; Mail Express B 1, G 1-1; Pussel B 1, G 3-1, Whang B 1, G 2-1; U. S. Puzzle B 3-1, G 1-1; Shopping Game B 1, G 3; Waterloo B 2, G 2-1; Literature Game G 3-1; Literary Women B 1; Noted Men of America G 1; Solitaire B 2, G 1; New Market B 1, G 1; Speculation G 3; Penock G 1.

*By Boys Alone.* Cock Robin, Columbus Base Ball Team, Bluff Cards, Delagoa's Travels, Hispaniola, Princeton and Yale Foot Ball Game, Slap, Massachusetts Puzzle, one each.

*By Girls Alone.* Louisa 7-3, History Game 4, Auction 3, Flag Game 2-1, Muggins 2, Heedless Tommy 2, Give Away, Everlasting, Geographical Games, Cities of Our Country, Goose Gander, Golden Locks, Game of Progress, Star Game, Desperation, Flower Game, Fortune Teller, Prisoner of Zenda, Rance.

TABLE GAMES.

Checkers B 277-87, G 189-34; Dominoes B 185-42, G 133-26; Chess B 25-3, G 1; Puzzles B 21-3, G 13-1; Lotto B 21-4, G 47-8; Go Bang B 11-2, G 11-4; Tic-tac-too B 11-1, G 10-2; Fox and Geese B 4, G 14-1; Halma B 2, G 5-1; Crocinole B 7-1; Parchesi B 17-2, G 40-17; Messenger Boy, Errand Boy, Telegraph Boy, Newsboy, Office Boy B 31-10, G 16-4; Nellie Bly, A Trip Around the World, A Race Around the World, Around the World in 80 Days B 17-3, G 7; Backgammon B 12-2, G 15-3; Old Mother Goose B 3, G 14-2; William Tell B 1, G 13; Cuckoo B 4-1, G 6; Yacht Race B 5-1, G 2; Steeple Chase B 2, G 4-1; Cash B 3-1, G 1; India B 2, G 2; Innocents Abroad B 3, G 1; Jack and the Beanstalk B 2, G 1; Little Miss Muffit B 1, G 3; Zigzag Kangaroo B 2, G 1; Bobb B 1, G 2; Arena B 1, G 2.

*By Boys Alone.* Toboggan Slide Game 2, County Fair, Sailor Boy, Three Horse Race, one each.



*By Girls Alone.* Crossing the Alps 3-3, Drummer Boy 2, Bicycle Game 2-1, Little Bo-Peep 2-2, Crossing the Ocean, Lost in the Woods, King Quaits, Stick Game, one each.

#### PARLOR GAMES.

Hide the Button B 14, G 55-7; Hide the Thimble B 15, G 26-2; Quaker Meeting B 5, G 10; Guessing Games B 10, G 2; Post Office B 3-1, G 6-3; Shouting Proverbs B 1, G 3.

*By Boys Alone.* Send my Ship to China 2, My Cook does n't like Peas 1, Jedkins Up 1, Ghost 1, Kiss the Pillow 1, One, Two, Three, Go Back 1.

*By Girls Alone.* Donkey Game 4, Strike an Attitude 4, My Ship Comes Laden with 2, Clap In and Clap Out 2, Buff with the Wand, Fortune Telling Games, Adjective Stories, Hunt the Slipper, My Lady's Toilet, Nonsense, Simple Simon, The Miller, Peek-a-boo.

### B. AMUSEMENTS PRODUCTIVE OF MOTOR DEVELOPMENT.

#### 1. Traditional Ring Games.

On the Green Carpet B 6, G 62-10; Grandmother Grey B 5, G 53-10; Go In and Out the Windows ("Winrows") B 4-2, G 40-5; Lazy Maid, Lazy Mary, Lazy Bessie B 2, G 33-2; Water, Water wild Flowers B 1, G 33-2; Ring Around the Rosy B 5, plus 10 at an earlier age, G 31-5, plus 10 earlier; Farmer in the Dell B 8-2, G 26-5; London Bridge B 3 (plus 11 earlier) G 23-3; Round the Mulberry Bush, "Round the Barley Bush" B 2, G 14; Billy, Billy Button B 5, G 1; Three Kings B 1, G 4; Jack and Jill B 1, G 4; Tin Tin a Poppy Show, or Pin, Pin," etc., B 1, G 4.

*By Boys Alone.* Bushel of Wheat, Bushel of Rye 2, Fly Kitty through Peals 1.

*By Girls Alone.* Jennie à Jones, Jemima Jones 24-3, Poor Tommy is Dead 14-2, Little Sally Waters 12 (plus 6 earlier), Forty Girls go Round the Ring, "Merry Girls, etc. 11-3, Draw a Pail of Water 4, Here come an Old Woman from "Farmerland" (or Cumberland) 5, Here comes one King 1, Here's the Way we Wash our Clothes 1, Have you any Bread and Wine? 2, Lady Bug, Fly, Fly! 1.

#### 2. Games of Chase.

Tag B 356-73, G 442-93; Hide-and-Seek B 241-74, G 427-132; Relievo B 356-126, G 194-48; Black Tom and Black Jack B 102-26, G 97-14; Drop the Handkerchief B 22-2, 101-11; Lion in the Den B 4, G 80-22; Puss in the Corner B 35-3, 73-9; Steps B 9, 65-9; Hare and Hound, Hunt the Hare B 65-13, G 6; Blindman's Buff B 42-2, G 64-13; Hill Dill B 45-6; 47-4; Run, Sheep Run, or Sheep Lie Still B 58-10, G 36-11; Bull in the Ring B 42-7, G 13; Bar Up B 42-6, G 20-2; Snap the Whip B 41-3, 50-2; Colors B 6, G 40-4; Duck on the Rock B 37-5, G 36-6; Stealing Eggs B 35-3, G 9-1; Birds B 9-1, G 25; Trade B 6, G 23-2; Old Witch ("Oh, Mother the Kettle is Boiling over," "Sunday, Monday," etc., "Old Man") B 6, G 19; Pig Tail B 5, G 18-1; Pinch Me, Oh! B 13-2, G 1; Last Couple Out B 1, G 12-5; Bonney B 6, G 3; Rachel and Jacob B 6-1, G 3; Chase the Squirrel B 6-1, G 2; Chase the Fox B 2, G 2; Gypsy B 3, G 3; The King (I'm on the King's Land) B 1, G 2; Lead, Leadman B 2, G 12-1, "Pond, Pond Pull Away," "Pump, Pump Pull away" B 1, G 1; Rush B 4, G 1; Pound the Back B 2-1, G 6-1; Fox, Fox and Goal B 2, G 1; Grand Daddy Long Legs (An Original Game of Chase on Stilts) B 2, G 1, Skip B 3, G 1.

### 3. Contests with Objects.

Ball B 679-241, G 409-67; Marbles B 608-115, G 130-21; Football B 455-151, G 1; Jackstones B 28-2, G 341-63; Hockey, Shinney, Polo B 313, G 8; Top B 176-28, G 11; Hop Scotch B 16, G 154-21; Croquet B 62-3, G 148-52; Hoop B 71-3, G 110-14; Stilts B 70-7, G 12; Bean Bag B 4, G 72-7; Pick Knife B 57-4, G 3; Tenpins B 53-10, G 6; Tennis B 51-10, G 31-10; Tip Cat B 33-1, G 10-2; Tiddledy Winks B 22-6, G 31-3; Pillow Dex B 16-2, G 21-4; Horse Shoes, Quoits B 19-2, G 1; Fish Pond B 12-1, G 15; Pool, Billiards, B 13-2, G 2; Jackstraws B 4, G 11; Golf B 4-1, G 1; Cricket B 4, G 1; Battledore B 1, G 3; Bagatelle B 2, G 3; Parlor Ring Toss B 1, G 1.

*By Boys Alone.*—Boxing 36-7, Fight for fun 1, Fencing 1, Sling Shot 22, Bow and Arrow 15-2, Hand Ball 4, Basket 2, Tug of War 5, Vaulting Pole 2, Shovel Board 1, Tivoli 1, Roly Poly 1.

*By Girls Alone.*—Shooting Game 1.

### 4. Other Athletic Pastimes.

Racing, Running B 51-13, G 8; Leap frog, "Foot and Half" B 48-8, G 1; Jumping B 44-4, G 8; Gymnasium, Gymnasium Apparatus, Dumb bells, Indian Clubs, etc., B 22, G 11; Poison B 2, G 16-1; Swinging B 13-1, G 22-4; Hurdles B 1, G 2; Wall Fences B 2, G 1; Bicycle, Tricycle, Velocipede B 160-78, G 91-46; Swimming B 119-26, G 15-2; Kite, Parachute B 107-5, G 12; Fishing B 80-19, G 7-1; Boats, Canoes, Rafts, B 78-18, G 27-4; Guns, Rifles, Hunting B 64-14, G 3; Tents B 33-2, G 14-1; Horseback Riding B 7-1, G 4; Carriage, Sleigh, Buckboard, Tally-ho B 16-5, G 22-3; Sled B 555-100, G 498-69; Skates B 538-168, G 412-113; Snow Balling B 123-14, G 98-3; Snow Shovel B 65-1, G 19; Snow Shoes, Skees B 58-3, G 10; Snow Man B 36-3, G 26-1; Snow House B 28-3, G 23-2; Snow Forts B 20-3, G 14; Toboggan B 2, G 2.

*By Boys Alone.*—Punching Bag 6-1, Wrestling 3, Vaulting 2, Last Dare 1, Roller Skates 1, Traps 4, Ice Boat 1.

*By Girls Alone.*—Jump the Stick 15, Hopping 2, Walk on Cans 2, Sliding on Feet 1, Somersaults 1, Merry-Go-Round 1, Snow Plough 2.

### 2. Practical Jokes.

Kings and Queens B 1, G 2.

*By Boys Alone.*—Digging for Gold 7, Pee-wea-mo-yet 2, Knight of the Whistle 1, Let'er Fly 1.

## C.

### 1. Games Mentioned Only as Outgrown.

*By Boys Alone.*—Cuckoo, Devil in the Band Box, Filling bar of soap with tacks, House that Jack Built, Play in the Tubs, Stealing Chickens.

*By Girls Alone.*—Barker, Drumming on Tin Pans and Marching, Five Little Rabbits, Fox and Cat, Little Boy Blue, Pea Porridge Hot, Peek-a-boo, Peter and Rachel, Roll Your Hands, Selling Birds, Stealing Chickens, The Cobbler, This is the mother good and dear.

### 3. Unclassified.

Attack, Farmer Jones's Pigs; Ducks and Geese, "The Geese, The Geese," Goose in the Garden, Hide the Gig, Happy Family, Mash, Pilgrim's Progress.

*By Boys Alone.*—Allart, Bombay, Boston Ring, Bug-a-Boo Bill, Catch my Bear, Catch the Wild Bull by the Horns, Catch the Fox by

the Tail, Croweck, Coast in the Well, Dickey Dick, Duckrick, Four Famous Funny Fellows, Four Louse Eaters, Free the Ring, Full Force, Galic, Gig, Mash the Gig, Muzzle the Gig, Gold Bank, Half Eagle, Have you ever seen a nigger, High Giggles, Hill Climbers, Kymo, Lilostillgo, Log Cabin, Man in the Moon, Pat, Peter Pumpkin Eater, Pike's Pike or Bust, Plume, Plump, Pooh, Range, Soldier on the Road, Six and Four are Ten, The Spear, Spole, Stag, Tarhand, Tat, The Capitol at Washington, The King Quoth, Three Mice, Twenty-three Fishers, Twiddles.

*By Girls Alone.*—All Nations, Are you in it? Babes in the Woods, Bean Stalk, Bean Stalk Stay, Black Jill, Boots without Shoes, Build the Bridge, Cut the Cheese, Demotion, Everlasting March, Feather Deck, Fly little boy, Forfeit, Four and Twenty Blackbirds, Golden Eggs, Gold Spoon, "Halo my children," Happiness, Happy Go Lucky, Have you ever? Hillock, Hunter, King Cole, I'm posted, I went to Paris, Jack-of-All-Trades, "John, John, I'll tell your daddie," Jumbo, Luck, Milk Maid, Minute Man, Mother Hubbard, Musks, Needle and Thread, Pall, Parlor Mantelle, Paws and Claws, Pick me out, Poor Farmer, Princess, Punch and Judy, Rain, rain, rain, Riding Hood, Road to Washington, Rock-a-Bye Baby, Sheep and Dog, Six Sticks, Snake Game, Squirrel, Strategy, Sunshade, The Poor Cat, Telka, Ticket Office, Tom Old Apple-tree, Tug Away, Twenty-three Dishes, Ward Game, What Katy did at School, Who'll go to heaven first?

### III. GENERAL FUNCTION AND CHARACTERISTICS.

What are the characteristics of such typical amusements as ball, marbles, jumping rope, tag, checkers, cards, dolls, playing horse, cycling, playing with leaves, stones, reading, etc.? Certain of these are marked by active physical exertion, but this cannot be said of all. Some are dramatic; some call for the exercise and display of varying degrees of skill. Some demand the co-operation of numbers and so necessitate a social community, others are adapted to the individual alone. Some plays are deliberative, others appear to be entirely impulsive. Some amusements satisfy if the individual has the opportunity merely to exercise his own skill, his mastery over self and over inanimate objects, while others necessitate the subordination or mastery of another. In most games the element of chance is present, the risk of not securing the desired end adding zest to the other attractive features of the games.

Most theories offered to explain the play of children begin by assuming a "play impulse" sharply differentiated from all other activities, yet the serious character of much play is a fact of common observation. The necessity of accounting for such an impulse has led many to assume again, as the basis of all play, an exceptional state of neural activity which is termed the condition of "overflow energy."<sup>1</sup> This, perhaps, is the

<sup>1</sup> Friedrich Schiller: Letters upon the Æsthetic Education of Man. See letters 25 and 26.

Herbert Spencer: The Principles of Psychology. N. Y., 1897. Vol. II, p. 627 ff.

most widely accepted theory, but it confines play to such physiological conditions as produce an excess of vital energy and also necessitates looking further for an explanation of the character of the resulting activity. It is the theory of animal rather than of human play. It does not give sufficient weight to the fact that both children and animals participate in certain games after a condition of extreme fatigue has been induced. To explain the varying character of the activity, Spencer adds "imitation" of some external act, serving as an extra stimulus at the moment when the pent-up energy is about to discharge.<sup>1</sup> Groos, accepting this theory as explanatory merely of a condition favorable to play, adds and emphasizes the part played by "instinct": "Thus we see that the explanation of play by means of the 'overflow-of-energy' theory proves to be unsatisfactory. A condition of superabundant nervous force is always, I must again emphatically reiterate, a favorable one for play, but it is not its motive cause, nor, as I believe, a necessary condition of its existence. Instinct alone is the real foundation for it. Foundation, I say, because all play is not purely instinctive activity. On the contrary, the higher in the scale of existence, the richer and finer becomes the psychological phenomena that supplement the mere natural impulse, ennobling it, elevating it, and tending to conceal it under added detail."<sup>2</sup> According to his theory "the animals do not play because they are young, but they have their youth because they must play."<sup>3</sup> Others, too, have emphasized "instinct," and through it sought a teleological explanation for the variety in play, while the recapitulation theory helps us to explain movements which seem to have but little to do with later life, on the ground that the child in the process of his development must of necessity reproduce the early history of the race.<sup>4</sup>

Nevertheless, as we consider all the amusements of the child we may, I think, assume that all his activity, be it physical or mental, is *always an expression of his psychic life, and that it always reacts upon that life.* Such a view of play seems to have been taken by Froebel, James and Wundt. The first sees in play the "self-active representation of the inner—representation of the inner from inner necessity and impulse."<sup>5</sup> Wundt finds, in the process of "association of immediate impressions with earlier ideas," the beginnings of an active imagination

<sup>1</sup> *Ibid.*, Vol. II, p. 709.

<sup>2</sup> Karl Groos: *The Play of Animals*, translated by Elizabeth L. Baldwin. N. Y., 1898. p. 24.

<sup>3</sup> *Ibid.*, p. 77.

<sup>4</sup> Burk, Frederic L.: *Teasing and Bullying. Ped. Sem.*, Vol. IV.

<sup>5</sup> Froebel: *Education of Man*. International Education Series, N. Y., 1896. p. 55.

which "shows itself with an impulsive force that the child is unable to resist,"<sup>1</sup> and this force being unchecked by inhibiting ideas, expresses itself in the varied activities of childhood. How varied this activity may be, when unchecked by inhibiting ideas such as influence adult life, may be apprehended by weighing the following words of James: "Where there is no blocking, there is naturally no hiatus between the thought process and the motor discharge. *Movement is the natural immediate effect of feeling, irrespective of what the quality of the feeling may be. It is so in reflex action, it is so in emotional expression, it is so in the voluntary life.*"<sup>2</sup> The italics are from the original text.

In whatever way Froebel may have conceived his "inner necessity and impulse," it seems impossible of translation into any terms, consistent with modern psychology, which do not also include "the association of immediate impressions with earlier ideas," and with "the thought processes" which form the initiative to action. In this sense the occasion for activity would not be confined to the discharge of motor cells, due exclusively to the general superabundance of neural energy; but would include such a discharge occasioned by great local activity in some psychic center, due to any stimulating agency, though this agency might be merely the stimulating effect of some metabolic process. The latter is the most plausible explanation which we have at present of many of the seemingly impulsive movements in the young, as for example of the vigorous but aimless kicking of the infant, or of the frolicking movement seen in the young animal. But a similar psychic activity with its accompanying motor discharge may be occasioned by varied external stimuli, and may continue far beyond the limits of healthy exercise—examples of which are far too frequent in many forms of nervous disease; and all who have ever experienced the state of "being too tired to rest," will readily recall the almost uncontrollable impulse to motion, although fully realizing the necessity of rest, and being irritated by the slightest disturbing influence.

This explanation of activity does not roughly separate that of the child from that of the adult. In both is found the impulse to action, due to metabolic processes or to the immediate reaction to some objective stimulus, and the deliberate action having some definite end in view. That the one form of stimulus is more frequent at one period of life, does not stamp all the activities of that period as different from those of the other,

<sup>1</sup>Wundt: *Outlines of Psychology*. p. 293.

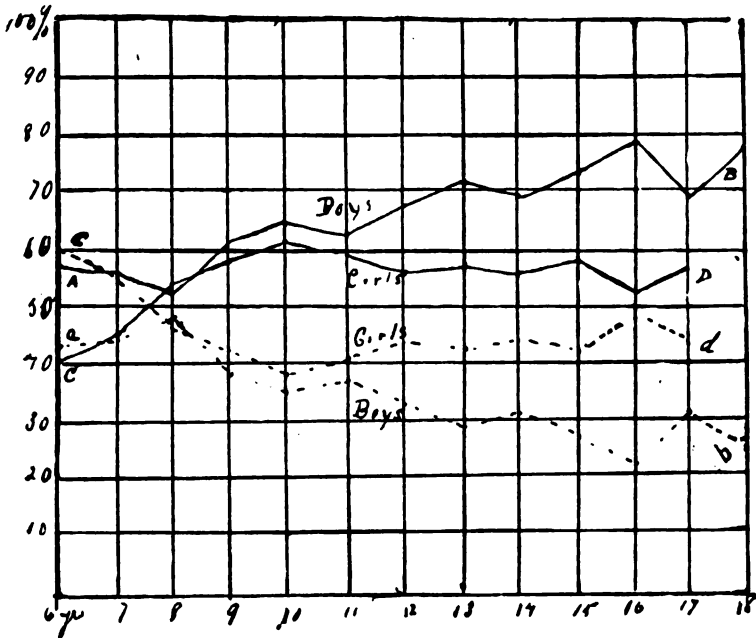
<sup>2</sup>James: *The Principles of Psychology*. New York, 1890. Vol. II, p. 526.

it only changes the emphasis. Such a view does not consider the child simply as a child to be treated as a child; but as a member of the human race who has already begun to take his place in the world where he lives. The school is no longer a mere drill-room—a vestibule to the life which is to follow; but life has already begun there, under conditions very similar to those which affect the teacher and the parent. In adult and child alike there is the psychic life struggling for expression, and in every expression reacting upon the psychic centers, and modifying them. The character of this expression is of the greatest importance, nor is it changed when the child has left the public school; whether he cares for knowledge or not, he will be a learner throughout his entire life.

With this general statement of the function of amusements as at once the expression and the means of psychic development, and without attempting to differentiate the explanation of the play activity from that of general activity, we will return to the consideration of the *characteristics of children's amusements* as seen in these returns.

The main classification was based on the motor development. The list of amusements calling for active physical exertion is

*Amusements tending toward Physical Development.*



so prominent as to lead to the placing first among the prominent characteristics *the desire for physical activity*. Man has this in common with all animal life. The foregoing chart indicates relatively the strong ascendancy of the physical exercises over all other forms of amusement; at every age after the ninth year it is represented as almost 2 to 1, and in the sixteenth year rising among the boys to 4 to 1.

The proportion which those amusements tending chiefly toward physical development bear to all other amusements, is shown for each year from 6 to 18 by curves A B and C D. Curves a b and c d are the respective complements of A B and C D, and show the relative proportion of all other amusement. From another standpoint the same characteristic is brought

**THE TWENTY-FIVE LEADING AMUSEMENTS.**

*Total, 1,000 Boys, 929 Girls.*

	BOYS.	BOYS.		GIRLS.	GIRLS.	GIRLS.		BOYS.		
		Mentioned by	Favorite with			Mentioned by	Favorite with			
1	Ball,	679	241	409	67	Dolls,	621	356	39	6
2	Marbles,	603	115	130	21	Sled,	498	69	555	110
3	Sled,	555	110	498	69	Jump Rope,	480	60	13	1
4	Skates,	538	168	412	113	Tag,	442	93	356	73
5	Football,	455	157	1		Hide and Seek,	427	132	241	74
6	Tag,	356	73	442	93	Skates,	412	113	538	168
7	Relievo,	336	126	194	48	Ball,	409	67	679	241
8	Hockey, Polo,	313	53	8		Play House,	365	54	59	5
9	Shinney,									
9	Checkers,	277	87	189	34	Jackstones,	341	63	28	2
10	Hide and Seek,	241	74	427	132	Play School,	257	32	69	1
11	Wagon, Express,	188	35	7		Doll Tea Set,	242	73	8	
12	Dominoes,	185	42	133	26	Doll Carriage,	233	80	5	
13	Top,	176	28	11		Relievo,	194	48	336	126
14	Play Horse,	166	26	47	3	Checkers,	189	34	277	87
15	Cards,	163	34	151	51	Hop Scotch,	154	21	16	
16	Bicycle,	160	78	86	45	Cards,	151	51	163	34
17	Snow Balling,	123	14	98	3	Croquet,	148	52	62	3
18	Swimming,	119	26	15	2	Dominoes,	133	26	185	42
19	Kite,	107	5	12		Marbles,	130	21	603	21
20	Black Tom and } Black Jack,	102	26	97	14	Leaves,	112	6	75	2
21	Horse Cobbles,	88	5	7		Hoop,	110	14	71	3
22	Books, Reading,	87	7	108	22	Books, Reading,	108	22	87	7
23	Fishing,	80	19	7	1	Flowers,	102	1	32	1
24	Boat,	78	18	27	4	Drop the Hand-kerchief,	101	11	22	2
25	Leaves,	75	2	112	6	Snow Balling,	98	3	123	14

out in the Table of the Twenty-Five Leading Amusements (p. 226) 9 out of the first 10, 17 out of the first 25, and 39 out of the 50 amusements mentioned the greatest number of times by the boys, are from this class; while from among the girls 6, 15, and 32 amusements belong respectively to this class.

Closely associated with the pleasure in physical exercise pure and simple, is that in the *development and exercise of skill*. It enters nearly all competitive games, where the conscious desire of mastery is likely to be the strongest motive, as seen in the little girl of eleven who liked to play tag best because she could "run fastest." It is one of the most prominent features in many athletic exercises, as in walking stilts and skating; also in games requiring manual dexterity, as marbles, and ball; it appears as mental skill in cards and puzzles. Every child likes "to make something." The wise direction of this instinctive desire, to accomplish something and to receive credit for it, is one of the strongest motives to which a teacher can appeal in guiding a pupil:

"With skill  
Goes love to show skill for the sake of skill."

Akin to this characteristic is the *desire of emulation*. Eight of the first 10 amusements of the boys, 15 of the first 25, and 30 of the first 50 are of a distinctively competitive character.

If anything is needed to supplement general observation on the child's pleasure in the society of others, it will be enough for the present to call attention to the fact that many of the amusements and most of the games mentioned require the participation of several persons. This is particularly true of the common ring games, games of chase and parlor games, and of most dramatic games. The reader will recall from his own experience the increased pleasure derived from the bicycle when he is not compelled to ride alone. However, we shall see later on that this is not an essential characteristic of the child's amusements at all ages; in fact, that in his desire to satisfy his curiosity, or his desire to realize his mastery over some obstacle, or to create something, the child becomes oblivious to all except the immediate task before him. Hence there is a long list of toys and objects, used either as toys or other means of passing away time, where the social instinct seems entirely in abeyance. The toy makes for individual development, the game for social.

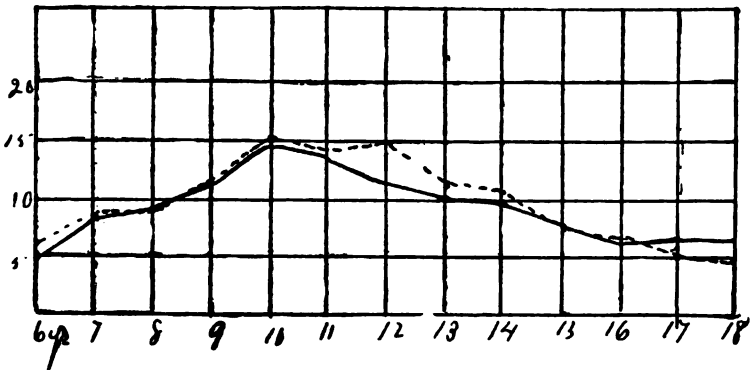
*The love of dramatic expression* is most marked in the many make-believe games, and in the traditional song games of early childhood; in many games of chase in which the children become bears, lions, Indians or policemen; in most toys, *e. g.*, the doll and toy horse; in the animistic use of many objects, as flower babies, and pebbles used as animals.



## EFFECT OF AGE.

Thus far the discussion has been of children *en masse*, with little distinction between the child of six and the young man of fifteen, and without regard to the different stages of development. Such treatment is almost inevitable in a study of this kind, but a few curves showing the general tendencies in children's amusements at different ages can be presented. Is there a play age? A time at which the child is more devoted to play than at any other age? The Curve of Interest in Traditional Amusements is a partial answer to this question.

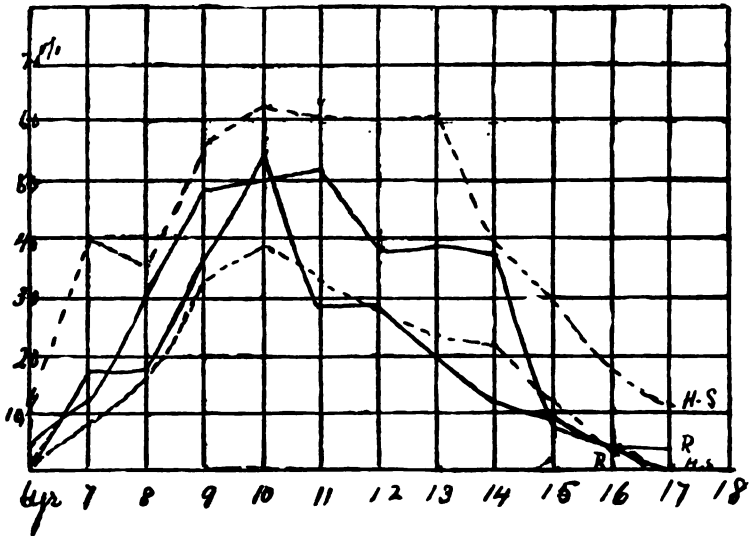
*Curve of Interest in Traditional Amusements.*



The basis of this curve is the average number of different amusements mentioned by the children at each age. Thus the children of six and seven mention on an average only five or six different amusements, but those of ten and eleven mention nearly fifteen. It is possible to give several interpretations of this. Were it not for the constant fall after the twelfth year, the form of the curve might be explained as due to increased facility of expression. There is still the possibility that the rise at nine and ten may in part be so explained, and the later fall may be due to the self-conscious restraint at the dawn of adolescence; but more probably it indicates, though somewhat vaguely, the period in which games predominate. From the eighth to the fourteenth year the average child knows more and plays more of the common traditional games than at any other period of life; and between ten and eleven interest in these is at its highest limit. Those who know from observation how fully the time of younger children is occupied with purely spontaneous play may at first question this curve. Let there be no misunderstanding; it does not say that the general play impulse culminates here, but that at this time the interest

in traditional games is strongest. The curves for Relievo and Hide and Seek, characteristic games of this period, indicate more specifically the nature of these games and the relative

*Curves for Relievo and Hide-and-Seek.*



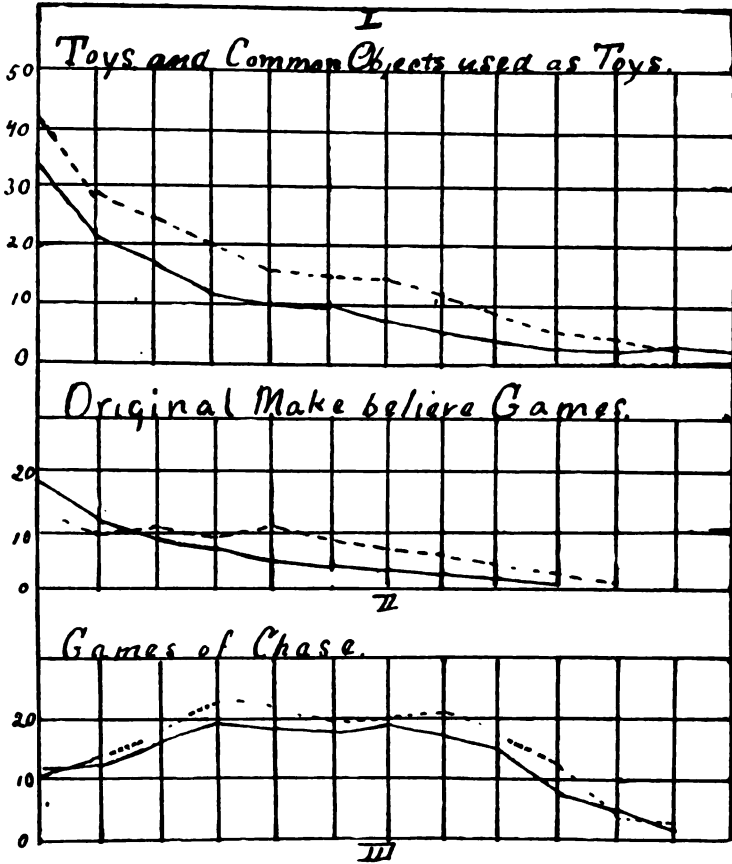
interest in them at different ages. Thus only eight per cent. of the boys of seven and eight years of age mention Hide and Seek, but fifty-five per cent. mention it in the tenth year.

A glance at the charts of Relative Interest at different ages will show in a general way that this is also the age at which different interests meet and blend; here for the last time the toy interest is considerable; it is the beginning of extreme interest in contests; it is the center of interest in games of chase.

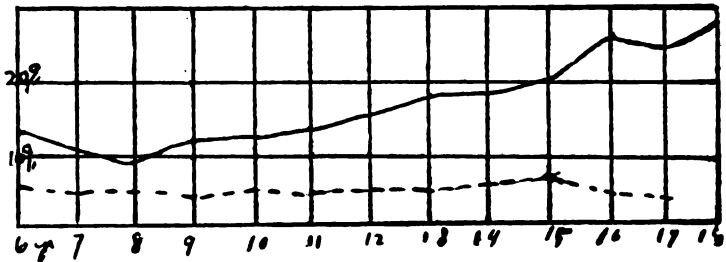
The Curves of Relative Interest trace the growth of special interests, indicating the nascent periods in a number of groups. Thus the Curve of Games of Chase shows that only eleven per cent. of all the amusements mentioned by the boys of six years are of this character, but at nine years they amount to over nineteen per cent., and at sixteen they have fallen to less than four per cent. The particular toys and games included in the groups characterized by these curves may be learned by consulting the corresponding headings in the list of amusements already given. See pp. 217-222.

Three natural divisions in the school life of the child may be made in accordance with the relative predominance of different characteristics in his amusements. In the first period from the

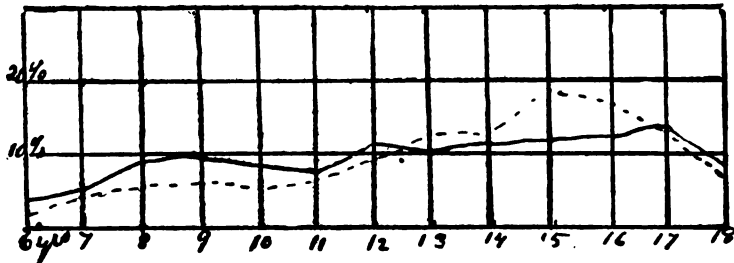
*Curves of Relative Interest.*



*Ball Games.*



## CURVES OF RELATIVE INTEREST.—Continued.

*Card and Table Games.*

6th to the 9th year, the greater part of the child's amusements center about some object, used symbolically or as a means through which to exercise the childish impulse for activity. In the second period, from 9 to 13 years, the favorite amusement is some game calling for vigorous exercise of the whole body as seen in the curve of Games of Chase; though, as already said, it is also the period of the greatest diversity of interests. In the third period, from the 14th year onward, the creative spirit prevails—that spirit which compels the child to do something, to become something. Most of the amusements of this period are contests, and for the first time the co-operation of a number to secure a definite end, or promote a common cause, becomes a common characteristic; while the majority of the remaining amusements center about some result to be attained.<sup>1</sup>

<sup>1</sup>Dr. Gulick: *Some Psychological Aspects of Physical Exercise*. Popular Science Monthly, Vol. LII, pp. 793-808 (Oct., '98). In this very careful study Dr. Gulick makes the five following divisions in the play life of the child:

1. Babyhood, 1-3 years.
2. Early Childhood, 3-7 years.
3. Childhood, 7-12 years.
4. Early Adolescence, 12-17 years.
5. Later Adolescence, 17-23 years.

Of the first two periods he says: "Children before seven rarely play games spontaneously. They do sometimes under the stimulus of older children or adults." In the third period "these games are almost exclusively *individualistic* and *competitive*, forming a strong contrast with the games of early childhood." In the period of *early adolescence* "two elements predominate: (1) That the plays are predominately team games, in which the individual is more or less sacrificed for the whole, in which there is obedience to a captain, in which there is co-operation among a number for a given end, in which play has a programme and an end. The second characteristic is, the period, with reference to its place, seems to be all of savage outdoor life—hunting, fishing, stealing, fighting, hero worship, adventure, love of

In the period from 6 to 10 years, and earlier, all manner of toys are used by the child in his amusements. Not only the toys which are bought or made for him, but every conceivable thing is utilized by him to give expression to his impressions of the world about him. Or perhaps one should say that, especially in the earlier part of this period, until about the ninth year, the toys and objects used form a means of comprehending; they are for the child organs of apperception; without the use of these crude symbols many of the simplest facts of life might never become a part of his earliest and most important stock of ideas experienced. The young child is a constant investigator of the phenomena about him, and is ever writing up the results of his empirical investigations in the language of his plays. The symbolic characters of this language may be a doll, a cart, a flower, a stick, a coal hod, a broom. Father's boots may be dear little babies, expressing all phases of early psychic life, and over which the young mother must exert a most watchful care, or they may typify a pair of prancing bays which attracted her attention earlier in the day. One young girl, beginning with her entrance into grade I, has continued to reproduce her school life by means of buttons through all the eight grades. In the buttons which represent the pupils she sees nearly the same children for each grade, but there is a new teacher each year. In such plays the imitation of the teacher is often reported to be almost perfect. It is a study in psychology, and from the child's standpoint might be termed adult study.

It has already been stated that the toy is a means of individual development. Does any one recall an active child who was ever content to remain long without some object in its hands?

With most of our kindergartens conducted on the principle of mutual co-operation, and in the face of the many facts showing that from earliest infancy the child delights in and craves the society of others, both of adults and children, but especially of others of its own age, it is rather venturesome even to suggest that this is not the period for extended co-operation.

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animals, etc. This characterization obtains more with boys than with girls."

"Comparing now the three major groups—early childhood, later childhood, and adolescence—it appears that the plays of early childhood are individualistic, non-competitive, and for the accomplishment and observation of objective results. The plays of later childhood are individualistic, competitive, involve active muscular co-ordination and sense judgment. The plays of adolescence are socialistic, demanding the heathen virtues of courage, endurance, self-control, bravery, loyalty, enthusiasm, and the savage occupations of hunting, fishing, swimming, rowing, sailing."

However, the individual element is the prominent feature of the amusements of children until the eighth or ninth year, when for the first time those plays requiring the active co-operation of many individuals assume prominence.

The original dramatic games cannot well be classed as belonging to any one of the three periods mentioned, but rather form a connecting link between the first and second. If a function of the toys be to facilitate the apperception of one's more immediate sensuous environment, that of these games and of many of the dramatic games of tradition is to facilitate the assimilation of a class of ideas, wider in range and more imaginative; they lead the growing mind to new and rich fields. The catastrophe of London Bridge, and other traditional games, introducing titled personages, delight each new generation. Playing in an American city, the little Queen of France daily entertains the Queen of England or makes a royal visit to the court at Windsor. The broad range of this make-believe interest is probably between the years from 9 to 12, yet within the narrower sphere of its immediate environment the younger child imitates to an equal extent. As Miss Frear has shown so clearly in charts II and III of her article on Imitation, in the early period the child imitates the "actual things," later the "idea."<sup>1</sup>

The characteristic games of the second period call for vigorous physical exercise; thus the games of chase, in which running is the center of interest, formed twenty per cent. of all the amusements mentioned by these children between nine and twelve years of age. That this tendency to much exercise at this period has a very important relation to growth there can be no doubt.<sup>2</sup> That the maximum of interest in such games corresponds to the lowest average in the tables of growth, as worked out by Kline and others, challenges the careful consideration of those competent to decide upon the effect of so much exercise at this period. "Increased action of the respiratory and circulatory systems is the most important physiological effects produced by muscular exercise."<sup>3</sup> This statement sums up about all that can be said at present of the effects of physical exercise. These effects, as worked out by Parkes, refer to the adult, and it is very probable that the results of this increased action, which would be injurious to an adult, might be beneficial if occurring in a growing child. Bierent<sup>4</sup> calls attention to the great increase in the volume of the heart

<sup>1</sup> *Ped. Sem.*, Vol. IV, p. 383.

<sup>2</sup> *Ped. Sem.*, Vol. V, pp. 412-416.

<sup>3</sup> Ralfe: *Exercise and Training*. N. Y., 1894. p. 30.

<sup>4</sup> Bierent: *La Puberté chez l'homme et chez la femme*. Paris, 1896. p. 161.

and in the richness of the contractile fibers of the heart at puberty, and to the fact that there is never, properly speaking, hypertrophy of the heart at this period; quoting Beauis, he also states that the heart beats at ten years number 91 per minute, and at fifteen years has fallen to 82. There is also a slight decrease in the normal number of respirations during these years. Thus this is the period of great development of the heart and respiratory organs, as well as the period of those activities which stimulate the heart to the greatest intensity; and yet apparently without the evil results certain to follow over-stimulation of the heart of the adult. We should have called this a period of violent exercise—and such its exercise most certainly would be for an adult, whose heart would soon be severely taxed were he to engage in some of the exciting games of tag common among boys at this age—had we not observed the promptness with which these boys respond to the feelings of fatigue. This instinctive knowledge of when he has had enough, and readiness to yield, is undoubtedly connected with that other virtue, here termed variety of interests, commonly called inattention. Combined, these are undoubted monitors of health and right development, guarding alike against excess in physical exercise and deteriorating monotony in school work. The person who attempts to get much physical labor from one of these boys discovers that he is lazy. The school teacher finds the grades in which boys of this age are most numerous, the most restless of all.

This period of extreme variety and vigor in physical exercise, and of rapidly flitting attention, is the period immediately following that at which the brain has ceased from its rapid early growth, having already by the eighth year reached its approximate limit of weight.<sup>1</sup> During these years, according to the neurologists, the important phase in the development of the brain is the increase in association fibers and the further medulation of these fibers. This furnishes a plausible explanation of the function of these games and a reason for their diversity. May it not be that this great diversity of interests, this restless, roaming attention, this craving for something new, this extreme desire to be able to perform some special feat of skill—all of which are so strong at this period—may not this be Nature's way of guarding against a too early cramping of interest along few lines, her way of seeing that a broad general development is assured by providing numerous and varied experiences at this period of the development of association fibers? If this be Nature's plan, then it has been most severely sinned against by those who have prepared the courses of study in

<sup>1</sup> Donaldson: *Growth of the Brain*. N. Y., 1895. p. 107.

our schools, for the fourth and fifth grades are the ones, beyond all other, most likely to be dry and uninteresting.

There is one other feature of this period which, although already mentioned, must not be left without special notice; it is the foundation for social co-operation, slowly laid by these games. Here are the beginnings of social life, of true citizenship, of combined independence and mutual dependence. In these varied games of chase, etc., are prominent those incentives to close attention, prompt and accurate action and self-control to a marked degree. There, too, is the necessity of many taking part, and hence the frequent and often forced recognition of the rights of others, of a justice with hard and fast laws which may not be lightly disregarded. The constant bickering, the petty quarrels characteristic of the play of children from nine to twelve, trying parents almost to despair, and convincing disinterested persons that "such quarrelsome brats" must be beyond hope, are but the parliamentary debates of early legislators. As yet, however, there is no true social co-operation. There is little of the general combined action, definitely continued to attain a fixed end. Even those games in which an adult sees the possibility of great co-operative action are played by boys below the teens with little attention to the results to be obtained by combining efforts, but are studded with feats of individual prowess; every player strives to be the star. Yet in this struggle of individuals are conditions forcing mutual consideration and preparing for the more definite co-operation of later years.

Our curves show that as late as the ninth year nearly 20% of the amusements of these children was with common toys or with objects used as toys; that during the next four years about the same per cent. of running games occurred. The further characteristic of these earlier periods having been traced, a closing study of the third period is made. After the twelfth year the interest in ball games rises rapidly, from 15% at 12 years to 26% at 16 years; along with this grows a corresponding interest in cards. This statement means that a third or more of all the amusements of these boys just entering their teens, are games of contest—games in which the end is in one way or another to gain an advantage over one's fellow—in which the interest is in the struggle between peers. In foot-ball, for example, there can be no doubt of the pleasure derived from the physical activity which sends the blood coursing through one's veins, giving rise to feelings of a vigorous self, to a heightened consciousness of one's own powers; nor is this consciousness of power wanting in a game of cards; nevertheless it is *the result to be attained*, ever being attained as the contest proceeds, that centers the interest in the games. At this early



stage in life the end must not be too far distant, the struggle must be ever present. Later on one may find delight in the severe preliminary practice which prepares him to win the later contest, or even in the strokes which are laying the foundation of his later success on the tennis court. Yet for the younger boy all this is drudgery unless the contest is ever present;—on the opposite side of the net must be some one to beat.

The beginnings and growth of this spirit of co-operation is beautifully shown by a comparison of the boys' curves for hide and seek and relieveo (p. 229). The latter is played by two sides, and hence has slightly more of the features of co-operation, though in many respects the games are of a similar nature. Note the culminating point of the upward rise in each at about ten years, followed by the rapid decline of the first, and the continued interest in the second, due undoubtedly to the appeal to this growing delight in contest.

A look backward at the Curve of Interest (p. 228) gives an additional explanation of the downward drop after 10. At 10 years an average of 14 different amusements are mentioned; at 16 not half that number. This is the natural consequence from the class of games played; the more remote the end to be attained in a game, the more confined to it will be the attention, if any interest exists, and hence the exclusion of many games heretofore quite common. Thus certain games appear as powerful aids in the development of the ability to concentrate one's attention, to specialize.

#### EFFECT OF SEX.

The charts and curves have already brought out distinctions between the amusements of the sexes. A résumé will make them clearer.

Nearly 40% of the 700 amusements of these children are common to both sexes, although about 30% are mentioned by each sex alone; for the most part the latter are games played but rarely.

A comparison of the leading games of the sexes calls attention to the greater variability of the male, a fact so frequently noted in the literature of evolution.

Amusements mentioned by fifty per cent. or more: Boys,—Ball, Marbles, Sled, Skates; Girls,—Dolls, Sled, Jumping Rope.

By 40% to 50%: Boys,—Football; Girls,—Tag, Hide-and-Seek, Skates, Ball, Play House.

By 30% to 40%: Boys,—Tag, Relievo, Hockey; Girls,—Jackstones.

By 20% to 30%: Boys,—Checkers, Hide-and-Seek; Girls,—Play Sol, Tea Set, Doll Carriage, Relievo.

Thus only 10 games are mentioned as commonly played by at least 20% of the boys, while among the same proportion of girls 13 games are common. This difference is continued as other games are added, 10% of the girls having 25 amusements in common, while the same number of boys have only 20. This indicates that the girls have a larger repertoire of amusements that are used regularly. Although several of the groups of amusements which suggest in-door life, seem at first to indicate the opposite, a careful study of the data shows that the boys are less conventional. Thus the proportion of toys to other means of amusement is much smaller, especially after the ninth year, with the boys than with the girls, but the girls use very generally such toys as tea-sets and doll carriages, which together with dolls, aid their imagination in the reproduction of domestic life; while the boys, though they use no toys so generally, mention a greater variety. Again what is true of toys is also true of their imaginative games. A very large proportion of girls will play a few games dealing with local life, as playing house, or school, or playing parties; while fewer boys play any one game, but their games are more numerous and deal with a wider environment.

Forty per cent. of all the amusements mentioned were indulged in by both sexes. This element of common interest is seen in the general correspondence between the sex curves in the different charts. There are exceptions, however, as in the curve where the girls are made to appear to indulge in toys to a much greater extent than the boys, and in the curve of Ball Games which the reader might interpret as showing that the girls are lacking in the spirit of emulation. The first has already been explained as due to the doll interest, so predominant in girls. The second, though showing that the girls do not indulge to so great an extent in these contests of physical strength, does not negative the statement already made, that the third period for boys and girls alike, is marked by contests in amusements. The curve for cards clearly traces the growth of this element in the character of the girls. Still this spirit of stubborn contest, delights in the strife for mastery, is more characteristic among the boys, and is illustrated by the game of chess, and by the curves for Hide-and-Seek and Relievo (p. 229). Chess, a game requiring close application throughout, and attention from the start fixed on a definite end, is mentioned by twenty-five boys; but only one girl of nearly one thousand included it in her list. In comparing the curves just mentioned, it is found that the girls continue their interest in hide-and-seek, as they seem to in all distinctively running games, long after

that of the boys has been drafted off to more vigorous and general contests.<sup>1</sup>

Dr. Ellis in his extremely suggestive article on Dolls<sup>2</sup> has clearly indicated their wide use and great value in the psychic development of the child. He also showed that doll playing was not confined to girls alone. But with him "dolls" had a much wider connotation than with these children who have listed "dolls" among their playthings. In the present study "dolls" must be considered as referring only to those toys commonly so called. Accordingly a very small proportion of the boys of school age are found acknowledging that they "play dolls," though the number reported is doubtless far too small, as there are obvious reasons why the average boy would not confess to this amusement. Many, however, speak of playing dolls at an earlier age, generally prior to their admission to school, when the doll was probably a common toy with them.

#### EFFECT OF NATIONALITY.

The child has the same general needs in his growth from whatever race he springs. On the whole, the following statement is true: the general character of the games played by these children of differing nationalities and diverse classes in society were the same whatever stage of their development was selected. This constantly recurring similarity was repeatedly brought to the attention of the writer during his work on the returns, and was to him an incontestable proof of the genuineness and accurateness of the answers.

The child, be he American, Swede, Irish, French or Jew, at the time when he enters school still clings to his toys; at nine, ten and eleven years of age he expands his chest, strengthens his heart, and gains a general control over the movements of his whole body, as he avoids capture or secures his prey in his games of chase. At the same time his active and unrestrained imagination will cause it to be more than a game of tag for him; he will be transformed for the time being into the character, human or animal, which the particular game calls for. The observer of the games at this period cannot fail to notice what a large proportion call for dramatization in some form. Later, whatever his nationality, the mere activity, the exercise in itself, will not be enough; at the end of it there must be something to show, some result, some object constantly in

<sup>1</sup> Groos states that those games in which is an active contest between sides, and necessarily a stricter subordination to law, are played more by the male sex; and he suggests that the social capacity of the American women is highly developed because they contest in all games freely with the boys.—*Die Spiele der Menschen*, p. 438.

<sup>2</sup> *Ped. Sem.*, Vol. IV, p. 129.

view, else he considers his activity thrown away. Now is the time to interest him in *something*—to form permanent interests.

Emphasis has been properly placed upon this general correspondence; but on that account no one should think that there are not important differences, due at least to the traditional environment with which birth invests children, even if the difference be not rooted in the national character. The playthings and games of the parent are an important element in determining those of their children; and as promoters and transmitters of amusements the parents are second only to the children themselves. The returns as tabulated showed that fewer toys were mentioned by the Swedish children than by those of American parentage; and the writer was told by teachers acquainted with both Swedish and American homes that fewer toys are found in the former than in the latter, this difference being very noticeable. A singular case in point is found in the returns under the heading of "Cards." In one school where there were 237 girls, for the most part of American parentage, 48 reported that they played cards, and 18 of these, an unusually large proportion, reported "Cards" as a favorite; but in two other schools in which the great majority were Swedish, although the total number of girls was 287, only two mentioned cards, and these two were Irish. The returns, however, indicate that the Swedish children more often made toys for their own use than did the American; whence it may be inferred that paucity of toys in the Swedish home is due more to parental custom than to childish instinct. The returns also showed that the Swedish children indulged in the games calling for active physical exercise to a much greater extent than any of the other nationalities represented, though the environment of Worcester children encourages games of this character, and their proportion relative to other amusements is very large among all classes of children in this city. This characteristic is prominent among the games of the Swedish girls as well as boys; with them running games of all kinds, skating and "sliding" are prime favorites. This great enjoyment of physical activity accords well with the usually accepted characteristics of northern races, and especially of the Scandinavian in its own peninsular.

I have to thank Miss Foley, the superintendent of physical culture in the city schools, for one fact of great interest. At the time these data were being gathered, she was conducting the very practical experiment of introducing common games into some of these same schools in the place of the ordinary physical exercises. In the course of her experiment she found that the same games were not equally successful in all schools; and that in one school, in which the children were largely of

American parentage, the spirit of rivalry, an opportunity to beat, was necessary to the successful introduction of any game. This spirit of rivalry is characteristic of cards, just mentioned as an example of a distinction between American and Swedish games; and in all games of this class the distinction holds good between the nationalities;—more rivalry among the Americans, among the Swedes more vigorous physical exercise.

#### EFFECT OF LOCALITY AND SEASON.

Comparing the tables of the leading amusements in Worcester (p. 226) and Brooklyn (pp. 240-242), and of leading toys in Westfield, a general agreement is found in the order and relative percentage of similar games; thus with the boys ball is first in both the former places, and sledding and skating are third and fourth respectively, while checkers is ninth on all three lists; the sled also is second with the girls from the first two places, and checkers occupy the fourteenth position.

On the other hand hockey (shinney) stands much higher on the Worcester list, and relievio is not found at all among the leading games<sup>1</sup> of Brooklyn boys, though extremely popular in the former city. Also the list from the Brooklyn girls give us a surprise as we read "dolls" down into the fifth place, jump rope, sled, skates and jackstones preceding, nor do games of chase appear to be so great favorites, and cards are played more. These are, as will be seen, only typical differences, such as will be found on comparing any two localities, and they illustrate two things which largely determine the free amusements of any community: (1) the effect of tradition, (2) and that of physical environment.

#### LEADING AMUSEMENTS.

Boys.—Brooklyn. Total number, 205.

	Mentioned by	Favorite with
1. Ball, (Baseball alone),	151 101	68 53
2. Marbles,	109	15
3. Sled,	100	9
4. Skates,	89	17
5. Foot-ball,	73	16
6. Top,	64	7
7. Tag,	51	5
8. Snow Balling,	48	5

<sup>1</sup>"Ring Relievio," however, is mentioned and described by Stuart Culin in the *Street Games of Boys in Brooklyn, N. Y.* (See *Journal of American Folklore*, Vol. IV, pp. 221-237.) This is the same game, although not played exactly as it is by the boys in Worcester.

*Boys.—Brooklyn.—Continued.*

	Mentioned by	Favorite with
9. Checkers,	45	15
10. Pass Walk,	40	5
11. Hide-and-Seek,	39	5
12. Sleigh Riding,	37	5
13. Prisoner's Base,	36	2
14. Snap the Whip,	33	1
15. Swimming,	28	9
16. Dominoes,	27	2
17. Puss-in-the-Corner,	27	1
18. Play Horse,	24	6
19. Bicycle and Velocipede,	23	6
20. Lotto,	22	4
21. Wagon,	20	4
22. Kick the Can,	19	2
23. Kites,	19	0
24. Shinney,	18	0
25. Messenger Boy,	17	8

All of these boys were between 8 and 16 years old, the great majority between 10 and 15.

LEADING AMUSEMENTS.

*Girls.—Brooklyn. Total number, 223.*

	Mentioned by	Favorite with
1. Jump Rope,	150	39
2. Sled,	131	14
3. Skates,	123	27
4. Jackstones,	121	33
5. Dolls,	117	60
6. Tag,	82	12
7. Play House,	79	22
8. Hide-and-Seek,	67	19
9. Bicycle and Tricycle,	58	25
10. Roller Skates,	81	15
11. Play School,	50	15
12. Dominoes,	49	15
13. Doll Carriage,	48	17
14. Checkers,	47	7
15. Ball,	46	9
16. Lotto,	46	7
17. Reading and Books,	45	3
18. Parchesi,	42	10
19. Sewing,	36	3
20. Croquet,	33	11
21. Messenger Boy,	31	6

*Girls.—Brooklyn.—Continued.*

	Mentioned by	Favorite with
22. Old Maids,	25	2
23. Sleigh Riding,	23	2
24. Bean Bag,	21	0
25. Play Store,	19	1

These girls were between 9 and 16 years of age, the majority between 10 and 13.

THE FAVORITE TOYS.

*Boys.—Westfield, Mass.*

	Total, 701.	29	58	80	77	118	118	102	90	34	15
		7	8	9	10	11	12	13	14	15	16
1. Top,	297	12	20	26	30	56	53	38	39	18	5
2. Ball,	260	7	15	29	20	46	44	48	31	13	7
3. Marbles,	227	4	10	15	20	45	43	39	34	13	4
4. Wagon, Exp'ss,	150	8	12	20	24	32	21	22	7	2	2
5. Football,	114	1	3	10	11	15	27	22	17	7	1
6. Bicycle,	95	3	5	4	7	17	22	17	12	7	1
7. Drum,	84	4	8	8	11	18	16	8	8	1	2
8. Skates,	76	1	2	11	4	16	18	13	9	2	
9. Checkers,	75	1	2	6	5	10	16	7	12	15	1
10. Gun,	74	1	2	6	3	19	16	17	7	2	1
11. Cars, Engine,	71	2	10	19	11	12	6	5	5	1	
12. Sled,	65	2	2	9	4	14	15	11	7	1	
13. Tool Chest, Tools,	51	1	4	5	7	14	3	6	9	1	1
15. Bat,	49	1	4	6	13	8	10	3	2	2	
16. Boats (toy),	48	1	4	5	7	14	3	6	9	1	1
17. Horse (toy),	45	6	2	13	7	6	7	4			
18. Books,	34	2	0	4	5	8	7	3	3	1	1
19. Cards,	33	1		1	2	6	7	12	3		
20. Blocks,	31	1	5	3	4	3	3	7	5		
21. Kite,	29				7	5	7	4	3	2	1
22. House,	27	2	5	3	2	3	1	4	4	2	1
23. Dominoes,	24		3	4	2	3	5	4	3		
24. Dog,	24	2	3	3	3	3	4	4	2		
25. Puzzles,	23			1	1	6	4	6	2	2	1

THE FAVORITE TOYS.

*Girls.—Westfield, Mass.*

	Total, 808.	35	65	102	108	104	121	128	100	24	19
		7	8	9	10	11	12	13	14	15	16
1. Dolls,	626	30	61	97	98	90	102	92	44	6	4
(Paper Dolls,	89	4	6	5	11	21	28	12	1	1	
2. Tea Set, Dishes,	223	10	27	30	42	31	37	32	14		

*Girls.—Westfield, Mass.—Continued.*

		Mentioned by							Favorite with			
3. Doll Carriage,	181	5	18	27	34	36	24	31	7			
4. Books,	134	4	7	17	24	27	21	17	12	3	2	
5. Top,	125	5	10	22	17	12	19	16	15	2	2	
6. Ball,	119	1	10	11	17	21	17	26	16			
7. Bicycle,	69		5	6	2	15	12	15	14			
8. Sled,	69		3	7	5	17	11	14	11		1	
9. Jump Rope,	68		8	11	9	7	10	14	8	1		
10. Skates,	67		2	3	4	17	14	15	11		1	
11. Piano,	62		7	2	2	6	13	20	7		5	
12. Checkers,	57		1	8	4	9	7	17	13			
13. Hoop,	49	2	4	7	4	9	12	4	6	1		
14. Stove,	49	1	6	9	9	8	8	4	4			
15. Paint,	45		5	6	3	5	8	10	6	1	1	
16. Blackboard,	43	1	3	7	9	3	4	14	2			
17. Dominoes,	39	1	3	3	7	4	3	8	7	2	1	
18. Doll's Bed,	37	2	4	5	9	5	6	4	2			
19. " Table,	37	1	4	5	6	9	4	6	1			
20. " Chairs, etc.,	33		1	8	7	6	6	3	2			
21. " Cradle,	29	1	4	5	6	4	4	2	3			
22. Blocks,	29	2	8	4	3	4	3	3	2			
23. Cards,	29		1	3	3	5	6	6	4	1		
24. Play School,	25	2	2	5	6	1	3	6				
25. " House,	24		1	4	6	1	3	7	2			

We have seen how parental influence was still a factor in determining the plays of the Swedish children of Worcester; here again is a most striking instance of a game, "relievo," nourished and developed until it is mentioned by a third of all the Worcester boys, and yet apparently played but little by the boys of Brooklyn, a little more than one hundred miles distant. But the interesting feature of it all is the substitution of games of the same class. In Brooklyn, Pass Walk and Prisoner's Base appear to be the substitutes for relievo, while general observation in Chicago and vicinity puts "Pomp, pomp, pull away" in its place.

One reason why shinney is three times as popular in Worcester as in Brooklyn, and that running games of all kinds appear to be more popular, is undoubtedly the exceptional inducements offered by the physical conditions of the former city; the many small ponds suitable for shinney are a constant invitation to the small boy with a pair of skates, and the innumerable vacant lots, covered with grass,—not yet the dirty dumping places so common in large cities,—have furnished Worcester, free of charge, an excellent system of small parks



for playgrounds.<sup>1</sup> The only regrettable fact is that these are neither as frequent nor as grassy in the poorer neighborhoods, where exist the greatest need of them, and that they cannot be made permanent. These back lots and the broad, shady streets offer the choicest opportunity for indulging in running games of all kinds.

While tradition and environment may perhaps have helped to place two amusements, jumping rope and jackstones, always favorites with city girls, higher up in the Brooklyn list, one other factor not due to locality has had its influence on the relative position of "dolls" and "cards;" a large proportion of the Brooklyn girls were in the upper limit of "the doll age," or, speaking from the other standpoint, they were just entering "the age of card interest." Had equal numbers of the same age been taken, the similarity between the two lists would have been much closer.

The difference in the Westfield list is due in the main to the fact that it covers less ground than the others, being devoted to toys alone and giving greater emphasis to these. Hence are placed high on this list toys which are not found at all in the other two. Another reason why certain of these toys, as wagons, cars, and drums, occupy so high a position, is found in the relatively greater proportion of children below ten years of age. The very prominent position of the top among Westfield toys may be due to either of two causes: it may be one of those local toys which has become strongly rooted there, or the returns may have been taken when "tops were in." Probably both of these conditions existed, for the top has a very wide range in its relative popularity in different localities, and, like marbles, it comes and goes like an epidemic.

The returns from our syllabus give very general or indirect answers in regard to the influence of the seasons in determining the games played; but a few observations are perhaps worth recording. In notes taken by the writer in Chicago during the spring of 1898 the following occurs: "Sat., Mar. 6.<sup>2</sup> Went-

<sup>1</sup>G. M. West, in his article upon *The Anthropology of American School Children*, found in the proceedings of the *International Congress of Anthropology, Chicago, 1894*, makes the following statement, which is of suggestive interest in this connection: "The Worcester children are markedly above the average in stature, while the Toronto and Boston children are almost as markedly at the opposite extreme."

<sup>2</sup>On the 15th of February, 1899, the writer saw, for the first time of the season in Chicago, marbles, ball, and various tag games, but the conditions were peculiar; for fully a month the weather had been exceedingly cold, the thermometer frequently registering 15° or more below zero, and there was little or no snow on the ground. Suddenly, within twenty-four hours, there was a rise of about 70°. After a few days the temperature again dropped, and these games disappeared from the streets as suddenly as they came.

worth Avenue electric. Saw, for the first time of the season, marbles, jackstones, and jumping rope. *Time*, late in the afternoon; *weather*, mild and fair. During the next week all these games, together with ball, became common on the Normal campus." "Mar. 31. 1.00-2.00 P. M. Cloudy and cold. During a walk of several miles I saw many groups of small boys without seemingly anything to do—just loafing along, or sitting with hands in pockets. Not a game of marbles, only two of ball, and a few of jump rope." By the last of April of this same year the boys of this vicinity had nearly stopped playing marbles, though a few sporadic games were detected during the next month. Ball was the prevailing game, though games of chase and similar running games began to be frequent, especially in the dusk of evening. General observations, made both in Chicago and Worcester, place the greatest interest in running games during the months of May and June, and the hours of the day those immediately following supper. While these are approximately the correct dates for a few games at a given latitude, it by no means follows that they would be correct for other localities. Indeed, we are told that the Greek boys of the present day play ball in winter instead of summer, and local conditions will undoubtedly modify the time of most games.

It is difficult to determine the time of playing; to give the reason is still more difficult. One young boy, when asked how they happened to begin to play marbles during a certain term, replied: "Oh, first one of the boys brought some marbles to school, and then others brought theirs." This does not explain how the first boy happened to bring his marbles, but under favorable conditions it is easily seen how a game may rapidly spread by imitation over a whole neighborhood, or even a city. In the varying environment furnished by the seasons are found most favorable settings for the games when they are played; in the fall when the body requires a high physical tone to withstand the inclemency of the season, the favorite out-of-door amusements are those which contribute to the formation and maintenance of this tone; the long winter evenings contribute their share to the mental growth in another but milder manner. In summer the favorites are out-door activities, but they do not make so continuous and severe demands on the physical powers. In the spring, when the bright, warm sun, and fresh, fragrant air calls children out of doors, but the deep sticky mud draws limits about their feet, the small spongy patches of fresh earth stimulate with irresistible strength the boys' associations with marbles, the girls with the jumping rope. And thus undoubtedly can the periodic vogue of many of the recurring games be explained on the basis of natural associations, quickened

by the physical phenomena of each season; and once started at a favorable time a game spreads by imitation.

EFFECT OF NUMBER OF COMPANIONS AND OF TIME OF PLAYING.

A few facts dealing with the problems of companionship, and with the effects of Sunday and evening restraint, have been gathered from the returns of these school children, and are here presented.<sup>1</sup>

Boys.	Girls.	Total number.
1000	929	

*I. When Alone.*

340	325	Books, reading. (Especially from 12 years on.)
38	117	Music. (Instrumental and vocal, principally the piano.)
53	55	Drawing, Painting, etc.
21	81	Making something.
0	74	Dolls.
31	52	Make-believe Games. (Especially at early age.)
20	0	Marbles.
18	3	Ball.
7	1	Walks.
4	5	Cards.
2	4	Talk. (To one's self, to Kitty, etc.)

*II. When in Groups of Two or Three.*

40	151	Make-believe Game.
118	76	Games of Chase.
81	110	Talk, Tell Stories, Riddles, etc.
98	71	Cards, Checkers, etc.
11	64	Music. (Instrumental and vocal, mostly singing.)
66	0	Marbles.
33	4	Ball.
3	31	Make something.
10	8	Walks.
2	7	Drawing, Painting, etc.
0	24	Dolls.
8	25	Reading. (Includes also several cases of more than three.)

<sup>1</sup>Data regarding the amusements of younger children at different periods of the day, have already been secured through the extreme kindness of friends and of those interested in child study; and these, although not yet carefully studied, reveal many interesting points, which may form the basis of a later article.

*III. When in Groups of More than Three.*

269	196	Games of Chase.
37	104	Make-believe Games.
37	43	Cards, etc.
27	73	Talk, Tell Stories, Riddles, etc.
67	4	Ball.
4	33	Music. (Principally singing.)
13	0	Marbles.
9	4	Walks.
0	6	Dolls.

*IV. Sunday Amusements.*

203	246	Reading.
64	80	Games of Chase.
48	65	Walks.
52	38	Cards. (Includes Bible Games, etc.)
9	53	Music. (Instrumental and vocal.)
6	34	Make-believe Games.
14	13	Drawing and Writing.
0	15	Dolls.
15	0	Marbles.
12	2	Ball.
1	10	Make something.
3	3	Talk, Tell Stories.

*V. Evening Amusements.*

102	280	Reading.
66	43	Cards.
44	29	Drawing, Painting.
13	50	Music. (Instrumental and vocal.)
4	37	Make something.
26	9	Games of Chase.
11	20	Make-believe Games.
9	5	Walk.
5	0	Marbles.
2	4	Ball.
4	1	Talk, Tell Stories.

The list of amusements "when alone" must have impressed the reader with the great emphasis given to the activities dealing with associative and constructive imagination; reading, music, drawing, making something, dolls, and make-believe games,—such is the order. Here is the suggestion of restless activity and of the paths along which it is expressed; under these conditions the creative power of the child is most active. Yet the one thing overcapping all others is the reading habit, especially strong after the twelfth year. Is this overwhelming

tendency to seek amusement in reading a perfectly natural one, or is it simply the most convenient form because open to all? Would other activities take its place, had earlier training qualified more persons to indulge in them? It seems probable that the latter is the truer answer; and had educators recognized the importance of leisure and its activities in the formation of each individual, our schools would strive to develop in each pupil the ability to do something besides gulp down stories. In his admirable monograph on reading, Dr. Hall has shown the abuse of the ability to read when it degenerates into a mere form of amusement;<sup>1</sup> and in later lectures and addresses he has made a strong plea for the acquisition by each child of the ability to do as many different things as possible. "How many things do you know how to do?" is his question. This plea has been made on the psychological ground that motor activity is a means of brain development. Surely, then, if the acquisition of these different powers tend to a more evenly balanced development of a man mentally, the continued practice of such activities must tend to steady one throughout life.

Lists II and III are characterized by those amusements which more than others foster the development of social habits—habits of forbearance, obedience to law, competition, co-operation, public spirit. The fancy of each child now is less free than in the condition of list I; even in the make-believe games it must yield to that of others, become more conventional and more cramped. List II by itself emphasizes the value of a chum in the normal development of every individual. If a child has not, in brother or sister, one of its own age with whom the most confidential relations may be established, it is the duty of parents to encourage and promote such relations.

The Sunday and Evening amusements exhibit the effects of restraint in two ways: first, in the predominance of isolating amusements,—a glance will show how much more these groups

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<sup>1</sup> "Reading, in emancipating men from their physical and mental environment, often weakens local pride and local interest, and creates a distaste for what is nearest, and what, therefore, should be pedagogically first. Finally, we sometimes find a habit of passionate reading in children that not only interferes with physical development, but destroys mental and moral independence, and may be called as morbid as the writing mania. Thus I have gradually almost come to the opinion that many of our youth would develop into better health and stancher virtue, and possibly better citizenship, and a culture in every way more pedagogical and solid, had they never been taught to read, but some useful handicraft, and the habit of utilizing all the methods of oral education within reach, instead." Hall, G. Stanley: *How to Teach Reading*, p. 17.

resemble group I than either II or III; and secondly, in the character of certain amusements which appear as a sort of protest against this restraint. As if the child should say: "If there's nothing else I can do in peace, I'll read;" or "I'm tired of staying in all day. Let's take a walk." Here is a basis for the consideration of the problem which confronts so many conscientious mothers and fathers: "What shall we do with our children Sundays? Shall they play the same games as on other days?" The answer in the individual case will depend much upon the personal belief and Sunday habits of the parents, but should be modified by the consideration of the probable effect of the day's activity upon the child.

Can one day in seven be made to have a different significance from other days without an injurious influence upon the young through the associations they form about it?

Something can be said for the educational value of a rigid Sabbath. If, even by what seems an artificial restraint, we are led to habits of contemplating the deeper and more spiritual things of life, to a more careful consideration of our duties toward God and man, the value of these habits from the commonly accepted moral standpoint cannot be denied; and if at the same time the American people learn how to rest from their nerve-destroying restlessness and activity, the value of a Sunday different from other days will be equally apparent from the physiological standpoint. But if a difference is to be made, the effect of the change should be the criterion of its legitimacy. It is our belief that psychology and physiology both advocate a holy day of rest, and that if parents felt the need of such a day, and its import, the character of the day would seldom appear so irksome to the child; for his appreciation of the day would be greater, and his liberties wider.

#### ARTICLES MADE OR ATTEMPTED.

Although question V asks the pupils to "describe any *plaything*" they had made, it is surprising to find so few games have been made; a few puzzles and checker boards are about all. There are, however, a large number of toys which are miniature copies of things in the child's environment, and which form the material basis of many of his plays; there are the dolls and toy animals, the houses, the water wheels and other machines, the sleds, boats, carts, the wooden axes and other model tools, the sword and gun. These are the things most commonly made by children; and they touch human life on all sides. Of the toys made, not included in this class, the majority are those that develop skill and self-mastery on the part of the user; the ball, top, stilts, snowshoes, and many kinds of gymnastic apparatus belong to this class.

As the children approach the "teens" a tendency arises, that is well expressed by one of the girls, who no longer makes playthings, but "things that are useful." Under this class are included the articles for Decoration as well as for Use; things for personal adornment, to beautify the school or home, and even various foods. This whole list, as may be seen, by no means begins to reach the limit of what the child may make, though it is suggestive both to the framer of a course in manual training and to a teacher looking for suggestions for her daily work.<sup>1</sup>

## I. FOR PLAY.

### 1. Games.

By Boys:—Puzzles 14, Marble game 1.

By Girls:—Puzzles 4, Anagrams 1, Checkers 1, "Game similar to checkers" 1, Old Maids (cut from paper) 1, Dominoes 1.

### 2. Dolls and Doll Toys.

By Boys:—Dolls 31, Man 7, Soldier 4, Indian 1. (Material used, paper, wood, clothes pins, and potatoes). Jumping Jack 4, Clothes pin Fighter 2, Hat 1, Boot 1, Doll Furniture 53, (chairs, tables, beds, benches, cradles, swings, cupboards, dishes. Material, paper, pasteboard, wood, clay.)

By Girls:—Dolls 304. (Materials, rags, paper, wood, clothes pin, pipe, stick, peanuts). Jumping Jack 3, Doll's Clothing 252 (dress, apron, waist, cap, bonnet, hat, cape, skirt, petticoat, cloak, pocket in dress, quilt, shoes, slippers, bloomers, doll's outfit). Doll's Furniture 141. (Bed, chair, rocking chair, high chair, sofa, table, dishes, carriage, cradle, bureau, hammock, pillow, mattress, stove, candlestick, tin looking-glass, wooden tub, benches, rope, knives and forks. Material, paper, wood, pasteboard, clay, burdocks.)

### 3. Toy Animals.

By Boys:—Horse 12, cat 9, Snake 3, Animals 2, Dog, Elephant, Fox,

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<sup>1</sup>Mr. James P. Upham, who for over twenty-five years has been connected with the premium department of *The Youth's Companion*, states that for prizes the boys are most likely to choose "something they can make something or do something with, or to earn something with;" thus the scroll saw has been by far the most successful premium ever offered by the paper; likewise the most popular premium for girls has been the Kensington Patterns (for art work). The following list includes the most popular premiums as determined during a period of twenty to thirty years: The camera (at present), microscopes and telescopes, magic lanterns, soldering casket, glass cutter, pocket tool-holder, outfit for making initial jewelry, carving tools, pocket knives, materials for building canoes, Florentine Bent Iron Work, Weeden's Engine, materials for a model motor, toilet hair clippers, oil painting outfit, water colors, etc., celluloid decorating outfit, dolls, collection of puzzles, megaphone, printing press, and certain books. In general, "educative" toys were considered unsuccessful as premiums, as also were electric toys on the whole. The latter were not nearly as popular as steam toys.

Goat, Monkey, Owl, Oxen, one each. Material, wood, paper, paste-board and potatoes.

By Girls:—Cat 7, Horse 6, Sheep 3, Baboon 3, Rat 2, Dog 2, Duck 2, Bird, Clay Animals, Cow, Fish, Oxen, Pig and Tiger, one each. Material, paper, rags, cloth, wood, handkerchiefs, pussy willows, and potatoes.

#### 4. *Model Toys.*

By Boys:—House, Tent 125, Snow Fort 8, Lighthouse 2, Bridge, Church, Depot, Saw Mill, and Small Farm, one each, Cart 138, Whip 5, Reins 5, Harness 3, Gig 3, Coasting Cart 1, Sail for coasting cart 1, Goat Harness 1, Bicycle 6, Engine, Cars, etc., 9, Railroad Track 4. Boats 205, includes toy boats of all kinds, birch bark canoes, used for models, and also raft and boats for actual use made or attempted by boys in their terms. Sled 151. The returns did not always distinguish the toy sleds from those made for use. Toboggan 6, Sleigh 1, Sledge 1, Ladder 30, Axe and Hatchet 15, Fork 9, Knife and Fork 1, Shovel 7, Snow Shovel 3, Circle Saw 6, Hammer (wood) 3, Spoons 2, Rake 2, Spade 1, Billy 1, Acorn Pipes 18, Cob Pipes 8, Orange Skin Teeth 4, Clock 2, Wire Spectacles 1, Money 1, Sword 66, Knife 47, Gun and Pistol 28, Bow and Arrow 16, Bow Gun 3, Soldier's Hat 10, Cannon 4, Spear 3, Tomahawk 2, Drum, Fife, Flag, Lariat, Marble Gun, and Shield, one each.

By Girls:—House, tent 68, Snow House 4, Log Cabin 1, Hut 1, ighthouse 2, Toothpick House 1, Doll Park 1, Bank 1, Cart 9, Reins 7, Harness 1, Engine 1, Boat 58, Sleds 21, Ladder 2, Saw, Rake, Spoon, Tin Scissors 1 each, Clock 3, Eye Glasses 3, Pipe 1, Knife 10, Sword 4, Gun 1. The material used by boys was commonly wood, by girls paper.

#### 5. *Mechanical Toys.*

By Boys:—Water Wheel and Water Hammer 20, Sand Wheel 2, Trip Hammer 1, Derrick 9, Scales 9, Theater 8, Elevator 5, Machines 4, Shafting 1, Shaft-holder 1, Train signal switches, etc., 1, Piece of tin with two holes through which passes a string; pull the string and it will cut 10, Kite 39, Pin Wheel, Windmill (wood) 3, Balloon 9, Air Ship 1, Electrical Apparatus 1, Batteries 10, Motor 7, Dynamo, Electric Car, Holtz Machine, Induction Coil, Incandescent Light, Switch Board, Telegraph, one each, Telephone 16, Camera 5, Sketching Camera 1, Magic Lantern, Jack Lantern 21, Sling Shot 16, "Stoppie," feather dart 12, Tic Tac 11, Pop Gun 2, Force Pump 2, Pea Shooter 1, Traps 12, Fish-rods 3, Fish-lines 1, Whistles 26, Clappers 8, Violin 2, Banjo 2, Drumstick 1, Wooden Drum to use in school 1.

By Girls:—Scales 4, String through button or tin cover—twist thread and then pull it 1, Kite 12, Pin Wheel 7, Windmill (paper) 3, Telephone 6, Feather Dart 1, Cat's Rattle 1, Horn 2, Accordion, Guitar, Violin, one each.

#### 6. *Toys for Physical Exercise.*

By Boys:—Ball 42, covering a ball was too difficult for one boy of fifteen, Top 26, Marbles (clay) 10, Bat 7, Foot-ball 3, Horse Shoe Rings 5, Bean Bag 1, Boomerang 1, Bowling Alley 1, Stilts 25, Snowshoes 9, Skees 7, "Jumper" 2, Skates 1, Ice Boat 1, Swing 4, Hammock 1, Boxing Gloves 4, Diving Board 4, Apparatus for high jumping, Vaulting Pole, Pounding Bag, Chest Weights, Trapeze, Exerciser, one each.

By Girls:—Bean Bag 13, Ball 9, Top (spool and paper) 4, Marbles 1, Bat 1, Parlor Croquet Set 1, Stilts (of tomato can) 5 (of wood) 3, Snowshoes 1, Swing 13, Hammock 4, See Saw 1.



## II. ARTICLES FOR USE.

By Boys:—Picture Frames, Bookcase 3, Book Shelf 1, Writing Desk 2, Desk 1, Ink Stand 2, Shelf 2, Bracket 1, Music Rack 1, Music Stand 1, Blackboard 2, Pool Table 1, Bench 3, Hammock Frames 1, Towel Rack 1, Step Ladder 1, Snuff Box, Cricket 1, Hen Coop 7, Pigeon House 6, Bird House 2, Bird Cage 1, Cage for Animals 4, Dog House 2, Rabbit House 2, Fly Cage 2, Squirrel House 1, Canvas Shelter 1, Carpenter Shop 1, Bicycle Stand 1, Canes 5, Sun Dial 3, Fence 1, Fence Picket 1, Fireplace 1, Furnace of Brick 1, Keg 1, Saw Horse 6, Sharpen Chisel 1, Tool Chest 5, Weather Vane 1, Candle Mold 1, Bullet Mold 1. Material for the most part, wood. Pictures 10, Valentines 5, Paint Flowers 1, Drawing (failed repeatedly on some particular object) 2, Paper Hats and Caps 6, Fans (wood) 7, Chain 3, A Book 1, Envelopes 2, Initials 1, Horse Hair Rings 1, Braid Hair (failed) 2, Sewing (failed repeatedly) 9, Compasses 2, Cotton Gin 2, Pulp Map 2, Wood Map 1, Writing Book, Australian Hut, and Ruler, one each, Candy 2, Gum 1.

By Girls:—Aprons 7, Dress 7, Dress Pattern 2, Crochet Dress 1, Coat 1, Coat Pattern 1, Collar 1, Sunshade 6, Trim Hat 1, Straw Hat 1, Quilt 5, Fan 2, Stockings 2, Mittens 1, Handkerchief 1, Finger Ring 1, Bags 3, Lamp Mats 3, Mats 2, Blankets, Bookcase, Bureau, Ladies, Pillow Shams, Poker, Rug, "Things that are useful," one each, Valentines 18, Landscape 12, Copy Portraits 2, Sketch faces 2, Easter Eggs 2, Pictures of objects, as cat, flowers 3, Write books (attempted) 2, Write Poem 1, Soldiers' Caps 4, Envelopes 3, Scrap Book 2, Ball, Book, Boat, Card Case, Fans, Fire Hat, Glove Box, Lantern, Love Boxes, Paper Pulp, Picture Book, Ring, Silver Heart, one each; material, paper. Fancy Work 135, includes Crocheting, Lace, Knitting, Sewing, and the following articles: Picture Frames, Tidies, Cushions, Pin Cushions, Pen Wipers, Dressing Case Covers, Tassels, Sofa Pillows, Bead Rings, Tray Cloth; Chains (paper and daisy) 5, Wreaths (leaves) 5, Peach stone Baskets, Fancy Bottle, Initials (cut from wood and framed), one each, Compass 2, Ruler 2, Map, Nail Map, Pulp Map, Pen from quill, School Bell, one each, Cake 7, Candy 5, Bread 2, Pie 2, Pudding 2, Ice Cream 1, Lemon Candy 1, Molasses Candy 1.

It is not to be supposed that any one child will make all of these things. Yet some children are quite likely to make a great number of them, and the variety and care with which they are made will be an important index of the child's capacity. Most children will, however, imitate the things made by their friends, striving to do as well or better; the genius with his original work is not the type of the child any more than of the adult. Hence the necessity of much of the work being suggested by the teacher.

The most successful attempt I have ever seen at original and careful manual work in the school, was in a fifth grade in Worcester, Mass., where a bright, progressive teacher, acting on a suggestion thrown out in a public lecture by Dr. Hall, told her pupils that they might make and place on exhibition in the schoolroom anything they chose. The best example of carefully and intelligently co-ordinated work was in the Cook County Normal School. In that school, particularly in the

lower grades, where there is greater need of supervision, the manual work is generally outlined by the teacher, and made to help out and illustrate other work of the school, while in the higher grades the pupils are allowed to make whatever they wish, provided their plans receive the approval of their teachers.

#### THE CHILD'S POINT OF VIEW.

No one has ever received the best reward from child study unless he has been led to a keener appreciation of childhood, and to a deeper and more genuine love for the child. The characteristics of his play may be outlined as has been done in this paper; the spirit of his play can be caught only by the person who can play with the child and enjoy the play; a touch of this spirit, however, may be found in the words of these children concerning their own amusements. In the following paragraphs quotations are made from the answers of the children.

##### I. REASONS FOR NOT USING CERTAIN AMUSEMENTS.

- "I like games. I don't like toys because they are no good." G. 10.  
 "Because I'm too big." G. 11.  
 "My favorite toys are dolls, but I do not use them very much because I am getting too old for them." G. 13.  
 "I used to play with dolls, but I have outgrown them. I think I was about four years old when I played dolls." G. 13.  
 "I cannot say that I am really tired of my childhood pastimes, although, of course, I do not indulge in them now." B. 17.  
 "The toys I like best are Brownies, printing press, electric motor, scroll saw, Welch's steam engine, type writer, tool chest, small shot gun, and a rifle. The reason I like to play with these toys, because these are toys for bigger children and the others are for babies and other small children. Also for another reason, you can use some of these toys and gain money on them." B. 11.  
 "I like a ball, foot-ball, and used to like tops and marbles, but do not now. I like baseball and foot-ball because I receive much enjoyment from them, and I come together with my friends, and time is very pleasantly passed." B. 14.  
 "I do not use the toys that I like best because I want to save it." B. 11.  
 "I don't play with my toys and games that I like best because I have to help my mother all the time." G. 12.  
 "I don't play my favorite games, because no one wants to play." G. 12.

##### II. REASONS FOR PREFERENCES IN AMUSEMENTS.

- "Marbles, Ball, Top. I don't know why I like to play those best." B. 11.  
 "I like these toys best, because I have played with them most." B. 12.  
 "I have no favorite play. I play games with the other children whether I like the game or not." G. 11.  
 "I play the game I like when the other boys want to." B. 13.

"I do what the rest happen to want to do, and I can never tell what that will be." G. 14.

"I like to spin a top because it is fun to hear it hum." B. 8.

"I like a train of cars best because I can make them go when I run." B. 9.

"Because I like to hit the other boys' tops and break them." B. 8.

"I like to play with a pea-blower and pop a hen on a leg, and the hen goes just like a sprained leg." B. 9.

"I like to play with a gun. Sometimes I swipe my father's gun and kill birds. Once the first time I swiped it I killed my cat and the kirk of it knock me down." B. 11.

I like blocks best because I can build houses and castles with them." B. 10.

"I like swords because I heard of brave men. I like lances because I read of Mohammedans and Christians." B. 8.

"I like to play with my dolls because I make believe they are alive. I like to play with my cart because I make believe I am a horse and have somebody for a master." G. 8.

"The playthings I like the best to play with are my kittens, my dog. I like these the best of all because they are alive and can move; dolls cannot move nor walk, so I do not like to play with them." G. 13.

"I like to play with a dog because the dog plays with me." B. 11.

"I like to play with a doll because I can pretend it is my baby." G. 7.

"I like a doll, a doll carriage, a doll bed, a doll hammock, a doll trunk, a doll kitchen, a doll house and other furnishings. A house because it is so like a big lady and a big house." G. 10.

"I like dolls because you can make believe you are their mother, and send them away and to school, and have lots of fun. Paper dolls, because you can make pretty paper dresses for them." G. 14.

"I like to play with dolls when we are many to play, but now I don't care much for dolls. We often make party and eat in little toy dishes. I like to eat in small dishes because I think the food tastes better." G. 13.

"I like to race on foot because you can get a price." B. 8.

"I like to play marbles because you can get lots of them." B. 10.

"Bat ball. Because it makes my muscles strong." B. 8.

"I like to ride a bicycle because your muscles will be hard." B. 13.

"I like a drum to play because if I could play so when I would be a man I would be in a band." B. 12.

"I like to play show to do tricks." B. 12.

"I like a bicycle because it makes me strong and I like to do tricks on it." B. 12.

"I like to play with my drum because all the people look at us." B. 11.

"The toy that I like is fish-pond, because it shows whose hand is the most steady. I like to play checkers because it shows who has the most skill." B. 14.

"I jump rope to see if I can jump as long as the others." G. 10.

"I like to play tag because I won't get caught." G. 10.

"I like my little express to make off I am a little expressman. I have got an old cowboy's hat and a sword and I make off I am a cowboy. I go through the road with my wagon as fast as I can go, and I scare all the little fellows." B. 12.

"I like to dance so as to be in a show." G. 11.

"I like to skate because one day I can be a fancy skater." G. 13.

"I like to play a piano because we can take music lessons. Then you can go to play in the churches and in shows." G. 13.

"The best game was tag because there was running in it." G. 11.  
 "I like a bicycle because I can go on it very fast and race with other boys." B. 11.

"I like carpenter tools best because you can make little wagons, chairs." B. 11.

"I like my tool chest because I can make some little tables for my little sister." B. 13.

"I like to play checkers because my papa plays with me." G. 9.

"I like to sew dresses on my sister's doll because I love to cut out patterns of capes, skirt, also waist, and many other things. My mother lets me sew them on the machine. I enjoy it. Sometimes she buys me some aprons and I make them myself. I love the machine very much." G. 14.

"The reason I like these toys is that I think there is a great deal of fun in them. They take the lonesomeness away from you." G. 13.

"Such toys as checkers, dominoes and tiddledewinks, I like these toys because one can sit down and have some fun, but still be resting." G. 13.

"I like to fly kites the best. Because I do not have to be running around all the time and will not get sweaty." B. 10.

To the reader who has noted these words of children, it will be apparent that the reasons given do not always explain. But inasmuch as the most careful students have not yet evolved a satisfactory theory of play, it is no wonder that the child sometimes fails to tell just why he plays certain games. Yet on the whole, in the light of this study, some of these answers show a wonderful power of introspection, and marvellous accuracy.

As the child begins to grow beyond the normal age for a certain kind of amusement, the child assumes a scornful attitude toward it; he is "too big;" it is "a baby game," and although only last year he played it as hard as ever he could, plays it occasionally even now in thoughtless moments, it seems to him something very remote. Thus the child's estimate of the age at which he played certain games, is likely to be one or two years less than it has been shown to be. And up to a certain limit the older the child, the older it thinks it was when it last played a given amusement, *e. g.*, the nine year old boys from a certain school state that they "played horse" when five years of age, the ten year olds when six or seven, those of eleven at seven, those of twelve at eight, and one boy of fourteen remembered that at eleven he still played horse.

Can any one doubt that the little boy of eleven likes best to play marbles, ball and tops, even though he is unable to tell why? Does it not seem probable that many a child likes best those things with which he "plays most?" Many a child plays but seldom with the toy he would prefer, because "sometimes one would want to play one game and some one else another," and so he "does what the rest want to do, and can never tell what that will be." Many games would be justified

if they did nothing more than offer "an opportunity for friends to come together" so that "time is very pleasantly passed." One play may be good for a boy because he can "run," show off, "get muscle," and yet not detract from the value of a game in which "one does not get sweaty," or in which one "can enjoy oneself and rest at the same time." There is pleasure in things that "are alive," that move, that "make a noise;" there is also pleasure and profit in taking the small, inanimate toy and endowing it with life, in feeling at once its companion, its creator and its master. How many a boy who at ten years of age, feeling all over the power within him, "pops a hen on the leg," or "kills birds" or finds it "such fun to run into something" with his little express, "and tip them all out if he can," has unjustly been considered unnaturally cruel? What a wide range and what clear backgrounds are given to his ideas as in imaginative games he builds "houses and castles," and reproduces life about him, and the past and present in history and fiction? The little eight year old runs his race to "get a price," and he likes the race. Ever since Saint Paul's day it has seemed good to "so run that ye may obtain." And these children, more and more as they approach those years when the adolescent soul yearns for the wider, richer things which it glimpses but grasps not, place before themselves something to be obtained, some end to be reached, and find a genuine, wholesome pleasure in the attempt to attain this ideal, and in the anticipation which accompanies this attempt.

#### APPLICATION OF STUDY.

What is the significance of this study? That depends both on the attitude and the experience of the reader. The principal points of value are here presented as they appear to me.

Much emphasis has already been laid upon the place of amusements in the development of mental life.<sup>1</sup> It is vastly more important that teachers and parents see that conditions are favorable for the profitable employment of the child's leisure time than that they graft "the play instinct" upon the methods used in the school. Later we shall indicate how some of the special facts brought out by this study may be utilized in the school room; now we wish to lay stress on the greatest "school of infancy," *free play*. From no other source does the child learn so much that is of permanent value in after life as in those hours spent in play apart from the direct influence of adults. Yet the value of this play may vary much accord-

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<sup>1</sup>Compare Baldwin: Mental Development. N. Y., 1897. pp. 129-147.

ing to conditions imposed by the child's elders. *It becomes, then, the duty of parents and of society to provide that, as far as possible, the most favorable conditions shall exist for the proper kind of amusement<sup>1</sup> at the proper time in every child's life.*

It has been shown that the early part of life is largely given up to individual development, to acquiring mastery over self, and to the comprehension and mastery of the physical environment in which the child is placed. It is necessary that he should have a chance to try his strength, exercise his skill, and satisfy his curiosity and imagination in every way. *He must have toys and objects of many different kinds* which his imagination may transform in imitation of the realities about him, or upon which he can exercise his skill. Are these conditions always found?

As the child grows older human society enters more and more into his development. The influence of companions of the same age, of one's peers in actual life, is the foundation of society. This rubbing together while engaged in what are to them the realities of life, is the essential factor at the base of every rational attempt to develop in the young principles of good citizenship. Concrete examples are the George Junior Republic at Freeville, N. Y., and the scheme of self-government followed in the Chicago Normal School. In both of these exceptionally successful attempts at self-government among minors, the actual life of the community has been the foundation. Their failures have been where there was a conflict between the theoretical and the actual conditions. The school itself is in many ways an ideal social community, and may be organized along lines which touch its own life in a most effective manner. But children detect sham. The moment a school claims to be an artificial city or government which it is not, it becomes less effective in training for citizenship than if not so organized. At the George Junior Republic, where the writer spent two months in the summer of 1897, the conditions were ideal for a community founded on the model of the United States government. The children were from a class of society where they had already faced the problems of securing an existence and met the temptation and crime. More than most children they were prepared for the rough conditions of the camp life at The Republic. It was for most of them a fairer opportunity for existence than they had hitherto enjoyed. They recognized the reality of their life under slightly changed conditions, and also, as never before, realized that they were a part of the social whole. But notwithstanding that in most respects "the citizen

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<sup>1</sup>Throughout I have used the word "amusements" as almost synonymous with "activities."

of the Republic" was a true citizen, it was impossible to disguise the fact that at times there was a power over them which did not originate among themselves, and which at times caused many to feel that all was a sham. In a school any such diversity between the actual and pretended conditions must make itself felt injuriously. Hence the recognition by the teacher of her schoolroom as a true social body, the members of which can be led to recognize their mutual duties and privileges—a result often accomplished by a skillful teacher—is much to be preferred to any artificial government which can be formulated.

Another problem which confronted the George Junior Republic was what to do with the younger members. The majority of the citizens had already reached their teens; but the few below twelve years of age, almost without exception, did not readily adapt themselves to citizenship. Their social instincts were not fully enough developed to warrant placing upon them the full responsibilities of citizenship even in a junior republic. The problem was solved by making the younger children wards of some citizen of twelve or more. This is empirical proof that the conditions, favorable for one age, may be unsuited to an earlier age, and is a caution against too elaborate schemes of self-government at too early an age in our schools.

Certain conditions of society tend to develop a child along one line to the neglect of another. Thus the country school while it favors the development of a strong individual character, frequently does not furnish as good an opportunity of developing co-operation as the city school; but there is more danger that the large classes of the cities may force the social development upon the child at too early an age; at an age when he is not yet ripe for it. Apart from the social demands, the needs of physical development make it most important that during the years from 9 to 12 every child should have plenty of companions, and suitable places in which to play these active running games which do so much to give final control over self, as well as the right spirit toward one's fellows. The child should also be supplied or, better, be allowed to supply himself, with those toys which tend to foster the physical exercises popular with the young at this period. Rousseau's estimate of the importance of such games is found in the following letter to D'Albret:

"In my time children were brought up in a rustic fashion, and had no complexions to keep. . . . Timid and modest before the old, they were bold, haughty, combative among themselves; they had no curled locks to be careful of, they defied one another at wrestling, running and boxing. They returned home sweaty, out of breath, torn; they were true blackguards, if you will, but they made men who have zeal

in their hearts to serve their country and blood to shed for her. May we be able to say as much one day of our fine little gentlemen, and may these men at fifteen not turn out children at thirty."<sup>1</sup>

This study is emphatic in its proof that one purpose of education, one of the aims of the school, is to prepare for *proper employment of leisure moments*. Child life is largely made up of such moments. And in no class of society do the long hours of work (often fourteen or fifteen hours per day) of our grandfathers now prevail; as a people we can say as never before, "our time is our own." How to use this time is one of the serious problems of to-day. It will leave its trace in our physical being, in our moral and mental make-up, in national character. The increased interest in athletics of all kinds and in out-door sports during recent years shows how this problem has forced itself forward; so, too, the many schemes for self-culture in the more favored homes, and the settlement work among the less favored districts of our large cities. The school has already done much, especially in the direction of developing "a many-sided interest," to recognize and meet this problem. Wherever literature, music, drawing, manual training, nature study, or any other branch of the curriculum has been so taught that a child has come to appreciate more fully the richness of the world of nature and man about him, and especially when he has acquired skill enough so that along any of these lines he can do something, however slight—can give some expression to his creative powers—the school has lent its aid to the formation of habits which will influence the whole future of that child's life. With the adult, even more than with the child, amusements are habitual. Hence must the school take into consideration the effect of its work, in the formation of conditions that will affect the play of the children to-day, and determine to a large extent their habits of amusement when men and women grown. The school will either develop activities which will persist, or it will prevent, by over-stimulation of certain interests, others that ought to persist. Consider for a moment these words of an exceedingly able high school boy of fifteen, and a hard student: "I never made anything—never had time." There is something almost pathetic in these words. There is also a great deal of truth in them; for though he generally led his class, he was compelled to study early and late, and, although he was supposed to have all that indulgent parents could give, his home environment did not favor manual work of any kind.

Realizing, then, that to prepare for the right use of leisure

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<sup>1</sup>Morley: Rousseau, Vol. I, p. 21.



moments is one of the aims of school life, let us consider how this study may be applied, first to the course of study and then to the methods of the schoolroom; without, however, distinguishing sharply between method and content.

In many kindergartens much stress is laid upon the unity of the ring and the unity of effort, and properly so. But although much work in common may be expected of children of this age, the period has not yet arrived for advanced co-operation, and there is danger that the social ideals of an adult may be made to take the place of those natural to this period of life. This danger is especially great in an age when the popular interest in sociology is so great as at present. Yet in few other ways do the followers of the great Froebel depart from his teachings further than when they emphasize the kindergarten as the place for social development rather than individual.<sup>1</sup> We think this study shows in its curves something of the true order of nascent periods; the order will be found to agree closely with that laid down by Froebel himself, though with greater definiteness. It shows that "boyhood" rather than "childhood" is the time when social instincts are strongest. "Boyhood" is the time when "they seek the laws lying in the material of the play, and adapt themselves to these, or they obey laws lying in the thoughts and feelings of the human

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<sup>1</sup> Prof. Colozza, of the Normal School at Naples, in his book entitled *Play in Pedagogy*, advocates less interference with the free play of the kindergarten child, and warns against starting the child into plays at too early an age before the natural inclination for such play has developed.

Another eminent Italian, Guiseppe Sergi, is quoted against the common practice in kindergartens by Dr. A. F. Chamberlain. (*Ped. Sem.*, Vol. II, p. 474.) "Suggestion in education has its limits. At an age when mental activity is in process of development, certain procedures may have grave and dangerous results—the brain, continually waiting for suggestion after the first, may be arrested and remain in habitual inertia; a narrow and restricted limit of cerebral activity may be created; a species of mental parasitism may arise; too clear a road and too easy a passage may be traced out for mental activity, which will naturally result in diminishing the individual mental variations which are the best advantage possible for the development of the mind and for the evolution of its products; just as in the case of the muscles, the cerebral functions, accustomed to be guided step by step, will cease to be prompt and quick, and in children there will be established real inertia, the result of hindering proper functional development. The Froebelian method is weighted down with these defects, for, while seemingly desiring to allow liberty and independence of mental activity in children, in reality it suppresses them." . . . "In the use of plays and games suggested or made by the instructors, and of which the children are merely the automatic executors, the same method of suggestion continues, which ruins the natural development of the children, tends to equalize them all and to abolish all initiative and individuality."

being."<sup>1</sup> But of "childhood" he says: "It is impossible to establish among the various stages of human development and cultivation any definite order with reference to their relative degree of importance, except the necessary order of succession in their appearance in which the earlier is always the more important. In its place and time each stage is equally important. Nevertheless, inasmuch as it contains the development of the first points of connection and union with surrounding persons and things, the first approaches toward their interpretation and understanding toward the comprehension of their inner being, this stage (of childhood) is of paramount importance. . . . Therefore, the child at this period should see all things rightly and accurately, definitely and clearly; and this applies to things and objects themselves, as well as to their nature and properties."<sup>2</sup> The following is his opinion of the effect of activities unsuited to an earlier stage of development; "He (the child) is much injured and weakened by having placed before himself at an early period, an extraneous aim for imitation and exertion, such as preparation for a certain calling or sphere of activity. The child, the boy, the man indeed, should know no other endeavor but to be at every stage of development wholly what this stage calls for."<sup>3</sup> This caution is of value higher up than the kindergarten.

The object of the first few years of school life is to further the development of the child, not to make him a full-fledged citizen. The perfect individual must precede the perfect state. Hence the first few years at school must deal largely with the immediate sensuous environment of the child and with his relation to it. He must be guided to a fuller knowledge of things around him—of what he can do with them, of what they may do to him—and this knowledge will include many of the simpler duties owed to those about him. Toys and objects of all kinds should be used freely as means of expression—to help tell the story of life about him—to help comprehend it. Much manual work should be encouraged, but it should neither be too accurate nor too delicate. Rough imitations of things about him, made of any material that is at hand and can be readily manipulated, are probably the best things to make, *e. g.*, toy men and women, animals, houses, furniture, dresses, machines, etc. Many of these are the natural toys of childhood.

During the middle and latter part of the elementary school grades especially between the years from nine to twelve, much

<sup>1</sup> Education of Man. p. 303.

<sup>2</sup> Education of Man p. 50.

<sup>3</sup> *Ibid.*, p. 30.

more attention should be given to physical development than is now common in schools. Our curves show this to be the time of greatest physical activity. Kline in his study on Truancy<sup>1</sup> tells how the desire to get away from the restraining influence of school and to do something has sent many a boy to the reform school. The success of the methods used in some of the most progressive reform schools, where the hours ordinarily devoted to literary subjects in our common schools are shortened and much manual work added with gratifying results, proves experimentally the soundness of this suggestion.

This is the period for the acquirement of manual skill and dexterity. The child likes to do things for the pleasure in doing, in learning to do new things and in showing that he is able to do them. At this period he should learn to do many things, should lay the foundation of skill along many lines. This is the period rich in possibilities, ripe for the formation of varied associations, according to the latest investigations of neurology.

Hence, not only should there be a great diversity of physical exercise, but a great variety of general ideas should also be apprehended in their simpler associations. Literature and nature study offer the widest possibilities along this line, and at the same time form the best content for the study of language. The meaning of ideas previously gained should be broadened, and new relations formed and new ideas introduced from a wider field. Perhaps at no time in school life should the range of the curriculum be as general.

In the next period is the birth of adolescence with all that means of new, far-reaching thoughts and feelings. Things begin to have new meanings and new purposes, and aspirations are formed—ends far away are sought. Less frequently is the activity in itself sufficient. Effort becomes concentrated. The course of study at this time should gradually become better co-ordinated into a few and more distinct groups, but should not suddenly confine the interest of the pupils to the three or four studies of the first year in the high school, as is now common. Thus to imprison the interests of the children within such narrow and forbidding walls is as unreasonable and criminal as were some of England's laws a century ago.

Although many speak of introducing the play spirit into school and of teaching everything by means of play, no one knows better than the teacher that all the child's activity is not play—in the sense of the free sportiveness of animals. Many of its amusements are serious for the child as well as for the adult. He must feel the importance of the task at hand,

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<sup>1</sup> *Ped. Sem.*, Vol. V, p. 147.

and the interest in the result continues to increase with every additional year.

In the earlier years before eight or nine, the largest possible use of all sorts of objects should be made. There are two main purposes which these fulfill: first, to gain new impressions, for which actual objects are preferable; secondly, as a means of expressing the stock of ideas already obtained and of broadening them. For this latter purpose, the rough imitative toys just mentioned on pages 250-252 or pictures may be of greater value, as they can be more readily handled and comprehended by the child. Common objects such as stones, leaves, flowers, pieces of paper, burdocks, etc., may be used as furniture, building material, dishes, money, and in countless other ways to great advantage. Especially will this be possible in the rural schools, which are less able to purchase supplies of a more elaborate character; and the gain in the capacity to use material at hand will be a distinct advantage to the child when later he is compelled, with limited resources, to face the problems of life.

The next period is really one of the richest in the development of the child. If in the earlier stage the training of his senses has been thorough and his impressions many, at this period it will be possible to gather these into usable form, and through them to apperceive much knowledge which will be a foundation for future effective creative work. Considering the great variety of definite amusements at this period, and the way in which these are played, we get a clue to the method of covering the wide field demanded, without overburdening the child with a multitude of subjects at one time. It is the method of treating some particular phase of a subject quite intensively for a time, as if it were an entire field in itself, and then dropping it for something related perhaps, but in turn considered as a whole. Literature and Nature have been referred to as especially adapted to this treatment. Social tendencies should now be fostered more than before. Things made, more than earlier, should have some use to which they can be put. Mechanical toys and toys for physical exercise are well adapted for part of the manual work of this period. The possible use of things at hand, which on both an economic and an ethical basis should be encouraged at all stages, should now be taught with the greatest care, for this is a period of exceptional possibilities along this line.

From the thirteenth year the child's amusements take on a decidedly co-operative and competitive character, and his efforts are more and more confined to the accomplishment of some definite aim. The course for this period will concentrate the effort upon fewer lines. A subject which on account of interest

might better have been treated in a few days or weeks in a lower grade, may now well occupy several months of more careful and deeper study. The result now demands greater attention, and the best work should always be insisted upon. Societies and associations of all kinds which favor this co-operation to accomplish some worthy end are to be encouraged now as never before. Nor can this well be separated from the spirit of emulation which has been found to be so characteristic of this period. A trait so prominent certainly justifies the Roman Quintilian in placing the love of emulation among the most important feeling upon which the teacher has a right to call; for it is only through the desire to do or make something, to show one's superiority or power over something or some person, to overcome some obstacle, that the individual, the nation, or the race makes progress. This same desire for mastery is present in fullest strength just at this age. It is the basis of the healthy rivalry of members, most often of a small group, in which each takes pride in the superior quality of his work. The same thing fostered by machine promotions, becomes the feverish pursuit of "marks" so often found in large schools where it appears not as a friendly contest with one's peers for acknowledged superiority giving constant opportunity for pride in personal merit, but a blind struggle to attain another end—a "passing mark." On the one side it develops "a pride o' worth" and the power to maintain one's self independently, and without asking odds; on the other, when the end receives too much emphasis, are found the seeds of dishonesty. The system of ranking, so prevalent in the great public school systems, makes it possible to find many, perhaps the majority of the pupils look upon the attaining of a set mark in their studies as the highest aim of their school work; to find principals who place a report containing few records of discipline or absence above the mental and physical health of their pupils, and superintendents who insist upon these conditions in order that their reports may be pleasing to the people.

There is no reason why throughout the course much of the work to be done should not be the *making of toys such as children commonly use*. The character of these will be seen more specifically by examining the list of things made. In the earlier years these will be for the most part simple representations of the living and inanimate things about them; later on may be made to advantage toys which are means of developing strength or skill, as for example those used in baseball or football; and still later will come the making of articles of use in themselves, as for decoration, use at home, etc. This rough division is not intended to be exclusive, as all classes of articles are likely to be made more or less at each stage; thus the

smaller children may make some of the simpler toys used by them for exercise, and many simple articles of use.

A few easy general plans are here offered by way of suggestion. One of the most promising fields is in the making of dolls, their dresses and furniture. This may be done by the pupils individually, each making articles for which it has some definite use, or by the co-operation of the whole room to fit out one doll as was done so successfully in the school in St. Paul, described by Miss Stoker.<sup>1</sup> The pupils of this particular school averaged fourteen years of age, and took the greatest possible interest in making something and in co-operating to secure a common result. With girls of this age or slightly younger, paper dolls and dresses might have been used to considerable extent, and advantage taken of the instructive pleasure in parties at this stage, to develop correct ideas of general social duties, and to interest in the principles of domestic science. Besides the families of paper dolls which may be made, it would be well to make table sets, tables and chairs, and eventually to have small dinner parties which might serve in many particulars for the model of those which all girls so much enjoy and play. These lessons should be suggestive to the extreme, and lay emphasis upon correct ideals.

In many schools the children already make small models to illustrate the subject studied, and in some these objects are utilized in the toy theater to dramatize the stories of which they read. Work of this sort may easily be made much more general than it is. The list of things made cannot fail to suggest many possibilities. Neither is there any reason why the teacher should not at times suggest the work of the children, though as far as possible they should be free to choose and to allow their own originality to develop. But the original child, the genius, is not the average child. Left to itself a child is likely to imitate some one else; hence it is often better in the lower grades that the teacher should select.

The value of the *out-door habit*, and of everything which tends thereto, cannot be too strongly urged. "The fresh air habit, at home and in the school, is the most wholesome bodily habit that can be implanted at the school age," writes President Eliot, of Harvard.<sup>2</sup> Much of the school work readily adapts itself to the formation of such habits. Nature study as taught does much, but should do more. One of the greatest values of collection is on this account. The collections which the child makes of stones, leaves, flowers, seeds, insects, etc., may not be of much value in themselves, but few motives can interest

<sup>1</sup> *Ped. Sem.*, Vol. V, p. 281-286.

<sup>2</sup> *Educ. Rev.* Dec. '97, Vol. XIV, p. 417.

a child more in things about him than the possibility of himself possessing them. Thus the passion for possessing takes the child to things which he should know and love; later throughout his whole life he will recognize with thrills of pleasure these old friends, and recall the exact spots where once long ago he found this or that in rich abundance. School walks, too, are of value sometimes, but in many cases, especially in rural communities, are likely to be mere subterfuges to get rid of school duties, and thus merely teach the possibility of shirking responsibilities; for the city children to whom the fresh country is always a rich treat this does not apply equally. But much better than any general walks may be the formation of walking clubs, picnic clubs, bicycle clubs, etc., which at stated intervals visit convenient places of interest.

Teachers may also refresh the interest of their children in being out of doors by the introduction of some new game. The best game to introduce is some game you used to play and especially enjoy; better still, if you can now enjoy it. Often it is no easy thing to introduce a new game as in many places the local traditions and conditions already so strongly favor certain games that others are not needed; and failure to succeed in such attempts ought not to discourage. On the other hand it is possible to find children with very scanty repertoires of games, and largely on account of their environment ignorant of the most common games. The writer can hardly imagine boyhood where the boys do not know how to play baseball. Yet it is said that when a certain play-ground was opened a few years ago in the neighborhood of a slum district in Boston, and the materials for the game supplied, the boys did not play until they had been taught the game by the attendants. On account of the limited number of associates of his own age the average country child knows fewer of the traditional games than his contemporary in the more favored parts of the city.

Children's descriptions of things they have made and the plays they have played form one of the richest fields for composition work, and one which has as yet been but slightly worked. It touches upon the most vital part of their life, and besides furnishing an interesting and rich subject for composition, reveals to the teacher much of child life with which she should be in sympathy. It could not but help and inspire her own work for her pupils. A careful study of the way children play such games as school and house, made in this manner, would contribute much to our present knowledge of the child.

Owing to the peculiar character of the returns forming the basis of this study there is danger that its true value will be underestimated by some, while others will give too great significance to the results presented. In the early part of this

article attention was called to the nature of these returns. They came from different schools as differently envired as it was possible to find in Worcester. Different teachers collected them; some talking the questions over with their pupils, and some merely giving the questions and having the answers written at once. The possibility of suggestion and the consequent unreliability of the returns at once occurs to any one who has tested the tendency to imitation, so strong in children. Accordingly the writer did not at first appreciate their true significance, particularly as they had been secured for the purpose of answering certain questions which had arisen in another study; and only after a careful examination was it realized that in an unusual manner they brought out the general characteristics of child activity, and were exceptionally reliable.

The questions were so framed that as far as possible they called up the child's own experience without suggesting any particular answer; the tabulated result did not depend on any one answer, but was a composite of a dozen or more answers, in the same return, to questions from different standpoints; and, as far as the general tendencies of child activity are concerned, the internal evidence of the papers, and the comparison with such other facts as are obtainable, favor their reliability. The evidence of suggestion was not so strong as would be at first naturally expected, and the little that was found did not materially influence the facts concerning a general activity or concerning any popular amusement. Grounds for this assertion will be found by comparing the list of questions asked with the Curves of Interest in Traditional Amusements (p. 228). Though these curves are compiled from the answers to over a dozen different questions, only between nine and fourteen years does the average number of different amusements mentioned exceed ten. Evidence of a minimum of suggestion is also found in the fact that the papers, as a rule, agreed chiefly on those amusements popularly known to be among the most common, and that the relative number of children mentioning them—*e. g.*, about 67 per cent. in the case of dolls and ball play—is apparently too small; on the other hand, they differed extremely in the less common amusements, as is shown by a total of over 700 different ones mentioned by these 2,000 children, who cite on an average only ten different ones.

These results, then, represent with approximate correctness the general characteristics of the amusements of 2,000 school children in Worcester. Local conditions and other causes in their environment, such as their school life, have undoubtedly influenced their choice of amusements, yet these children repre-



sent average American children, and these results are typical of their normal activity.

#### BIBLIOGRAPHY.

A few selected titles are here given, but only such as are likely to be most helpful to the reader wishing to make further investigations along this line. Of works descriptive of many of the games mentioned in this article, Newell is, perhaps, the best of any one authority. He gives a good description of many of the traditional games of America; shows how they may vary in detail in different localities, and yet retain the essential features; and he accounts for the remote origin of many amusements. Of similar value is Miss Gomme's *Traditional Games of England, Scotland and Ireland*. Such general works as Champlin, Cassell, and Routledge's also describe many of these games and some of the other forms of amusement common among the young. Misses Gomme and Willard have each collected a few of the more common singing games of children, giving the music as well as the words. Since Babcock and Culin found in Washington and Brooklyn many of the games now popular in Worcester, their description will be of special interest to the reader of this article.

For the discussion of the theory and psychology of play the reader is referred to Groos, chapters I and V of the *Play of Animals* and the same author's more recent work, *Die Spiele Menschen*. Groos gives the fullest and clearest treatment of this subject to be found, and his bibliography in the foot notes is very full. The function of human play is also discussed by Baldwin. The references, already given to Froebel, James, and Wundt, account for some of the different phenomena observable in the play of childhood. Dr. Gulick gives the results of his own careful observations. Newell finds many of these games merely the inheritance of the ceremonies and amusements of adults at an earlier period; Culin associates many of them with the ceremonies of divination; while Taylor sees in these plays and movements of childhood the recapitulation of primitive life and its movements; and Burk in teasing and bullying sees a phase of the same tendency.

La Grange has published what is perhaps the most complete study of physical exercise; while Keating and Ralfe have each put in more popular form the accepted opinions upon the results of physical exercise. Beyer in his study of the cadets at Annapolis has made the most important contribution in English regarding the effect of exercise in growth. The general attitude of those interested in physical training is well seen in the admirable discussion of the different systems of physical culture found in the Report of the U. S. Bureau of Education for

1891-92. A progressive modern view of physical education is given in Dr. Hartwell's paper mentioned in the bibliography. Lesshaft and Bierent touch upon the physiological effects of physical activity during the years of childhood; while Burk's article, *From Fundamental to Accessory*, presents the more recent opinions concerning the development of the nervous system.

Comenius, Froebel, Richter and many others among the educational writers, have commented upon the peculiar value of play. Froebel more than others has recognized and attempted to take advantage in education of the play instinct. Johnson has gone a step farther in suggesting a much wider use of the game in the school. Sergi and Colozza have studied play from the psychological and pedagogical points of view, and both criticize the artificialities of modern Froebelianism. Hall and Ellis have shown the great role the doll plays in the psychical development of the child, and suggest its use in the schoolroom. Miss Blow upholds the symbolic side of the kindergarten system.

Russell's observations and the accompanying study by Miss Frear deal with imitative play. Strutt and Fettis give excellent pictures of the amusements of England and Scotland in the past. The most complete account of physical exercise and related topics, especially of the German system of gymnastics, is Euler's encyclopædia.

The following brief list of selected titles should be supplemented by reference to the bibliographies of Chamberlain, Johnson, and Miss Sisson, and the *Bibliography of Child Study* by Louis N. Wilson.

- BABCOCK, W. H. *Games of Washington Children*. *American Anthropologist*, July, 1888, Vol. I, pp. 243-284. Also in *Lippincott's Magazine*, May, 1886, Vol. XXXVII, pp. 239-257.
- BALDWIN, J. MARK. *Social and Ethical Interpretation in Mental Development. A Study in Social Psychology*. N. Y., 1897. pp. 574.
- BEYER, HENRY G. *Influence of Exercise on Growth*. *Jour. of Experimental Medicine*, Vol. I, pp. 546-558. Also the *Am. Phys. Rev.*, Vol. I, pp. 76-87.
- BIERENT, LÉON. *La Puberté chez l'homme et chez la femme*. Paris, 1896. pp. 200.
- BLOW, SUSAN E. *Symbolic Education. A Commentary on Froebel's Mother-Play*. N. Y., 1894.
- BOWDITCH, H. P. *The Growth of Children. Report of the State Board of Health of Massachusetts*. Boston, 1877.
- BURK, FREDERIC. *From Fundamental to Accessory in the Development of the Nervous System and of Movement*. *Ped. Sem.*, Vol. VI, pp. 5-64.
- . *Teasing and Bullying*. *Ped. Sem.*, Vol. IV, pp. 336-371.

- CASSELL. *Book of Out-door Sports and In-door Amusements, Card Games, and Fireside Fun.* London, 1881.
- CHAMBERLAIN, A. F. *The Child and Childhood in Folkthought.* N. Y., 1896. pp. 464. Bibliography, very helpful. See p. 405.
- CHAMPLIN J. D., AND BOSTWICK, A. E. *The Young People's Encyclopedia of Games and Sports.* N. Y., 1890.
- COLOZZA, A. *Il Giuoco nella Pedagogia.* Torino, 1895. Vol. XIV, pp. 288.
- COMENIUS, J. AMOS. *Comenius's School of Infancy. An essay on education during the first six years.* Edited by W. S. Monroe. Boston, 1896. pp. 16-99.
- CULIN, STEWART. *Korean Games with notes on the corresponding games of China and Japan.* Univ. of Penn., Phil., 1895. pp. 36-177. See preface.
- —. *Street Games of Boys in Brooklyn.* Jour. of Am. Folklore, July-Sept., 1891, Vol. IV, pp. 221-237.
- ELLIS, A. C., AND HALL, G. STANLEY. *A Study of Dolls.* *Ped. Sem.*, Vol. IV, pp. 129-175.
- EULER, CARL. *Encyclopädisches Handbuch des gesamten Turnwesens und der verwandten Gebiete.* Wien und Leipzig, 1894. 2 Vol.
- FETTIS, ROBERT S. *Sports and Pastimes of Scotland.* London, 1891. pp. 212.
- FREAR, CAROLINE. *Ped. Sem.*, Vol. IV, pp. 382-386.
- FROEBEL, FRIEDRICH. *The Education of Man.* Translated by W. N. Hailmann. N. Y., 1896. pp. 332.
- GOMME, ALICE B. *Children's Singing Games, with the tunes to which they are sung.* N. Y., 1894. pp. 70.
- —. *The Traditional Games of England, Scotland, and Ireland.* London, 1894.
- GROOS, KARL. *The Play of Animals.* Translated by Elizabeth L. Baldwin, with preface by J. Mark Baldwin. N. Y., 1898. pp. 26-341.
- —. *Die Spiele der Menschen.* Jena, 1899. pp. 538.
- GULICK, LUTHER. *Some Psychological Aspects of Physical Exercise.* Pop. Sci. Mo., Vol. LII, pp. 793-808 (Oct. 1898).
- —. *Psychological, Pedagogical, and Religious Aspects of Group Games.* *Ped. Sem.*, Jan., 1899.
- HARTWELL, E. M. *Physical Training. Its Function and Place in Education.* Am. Phys. Educ. Rev., Vol. II, pp. 133-154.
- JOHNSON, G. E. *Education by Plays and Games.* *Ped. Sem.*, Vol. III, pp. 132-133.
- KRATING, J. M., AND YOUNG, J. K. *Physical Development.* See Vol. IV, pp. 241-324.
- —. *Cyclopedia. The Diseases of Children.* Phila., 1891.
- LA GRANGE, FERNAND. *Physiology of Bodily Exercise.* N. Y., 1896. pp. 395.
- LESSHAFT, P. *De l'Éducation de l'Enfant dans la Famille et de sa Signification.* Paris, 1894.
- NEWELL, WILLIAM W. *Games and Songs of American Children.* N. Y., 1884. pp. 242.
- PARKES, LOUIS C. *Hygiene and Public Health.* 5th Ed. London, 1891. pp. 557.

- RALFE, C. H. Exercise and Training. N. Y., 1894. pp. 96.
- Report of U. S. Commissioner of Education, 1891-1892. Vol. I, p. 636.  
Physical Education 1. Historical Sketch. 2. Essential Features  
of Principal Systems represented in this country. 3. Suggestions  
concerning School Gymnastics.
- ROUTLEDGE, E. Every Boys' Book: a complete Encyclopedia of  
Sports and Amusements. London, 1881. pp. 904.
- RUSSELL, E. H. Child Observations. First series: Imitation and  
Allied Activities. Edited by Miss Haskell. Boston, 1895.
- SERGI, GUISEPPH. Dolore e Piacere Milano, 1894. XV, 395 pp.  
Pages 273-284 on Play.
- SISSON, GENEVA. Bibliography of Children's Games. In Barnes's  
Studies in Education. No. 5. pp. 184-189. Sanford University,  
1896. Refers to 23 books and articles, and 10 syllabi. Indicates  
character of each.
- STRUTT, JOSEPH. The Sports and Pastimes of the People of Eng-  
land. . . . from the earliest period to the present time. New  
Edition by Wm. Howe. London, 1845. pp. 420.
- TYLOR, E. B. Primitive Culture. N. Y., 1874.
- WEST, G. M. The Anthropology of American School Children. In-  
ternational Congress of Anthropology. Chicago, 1894. pp. 50-58.
- WILLARD, ELEANOR W. Children's Singing Games. N. Y., 1895.  
pp. 67.
- WILSON, LOUIS N. Bibliography of Child Study. *Ped. Sem.*, Vol. V,  
pp. 541-589. Contains 641 titles, and is carefully indexed for  
convenient reference.

## STATUS OF CHILD STUDY IN EUROPE.<sup>1</sup>

By WILL S. MONROE, State Normal School, Westfield, Mass.

It has seemed to the president of the child study department not inappropriate to present at this time a few facts bearing upon the status of the child study movement in some of the countries of Europe. In Great Britain, in France, in Germany and in Italy, advocates of child study have organized to an extent that is astounding to the most ardent supporters of the movement in America, where, more than anywhere else, child study has assumed commanding prominence, as a vital educational question. Workers in the foreign fields have kindly responded to requests for information regarding the status of the movement in their respective countries; and the hope has been expressed by a number of the friends of the cause abroad, that, at the great exposition to be held at Paris a year hence, there may be some formal organization of an international character. Some affiliation of the workers would unquestionably be helpful to all concerned; and it is to be hoped that the American friends of child study may not be remiss in co-operating with our friends and co-workers abroad in instituting such an international association.

### GREAT BRITAIN.

The following communication from Miss Kate Stevens, the honorable secretary of the London branch of the British Child Study Association, gives a clear notion of the child study activity now so marked in educational circles in Great Britain:

In 1893 several English and Scotch teachers visited the International Educational Conference at Chicago as delegates. Some of these delegates became greatly interested in the work of Child Study, as there conducted by Dr. G. Stanley Hall. After further enquiry into the subject, and a visit paid by Miss Mary Louch of the Ladies' College, Cheltenham, to the Summer School of Clark University in 1894, it was resolved by Miss Louch, Miss Margaret A. Clapperton, of Edinburgh, and Miss Mary B. Coles, of London, to found a British Child Study

<sup>1</sup>President's address before the Child Study Department of the National Education Association at Los Angeles, California, July 12th, 1899.

Association. Advantage was taken by these delegates of the Summer Meeting at Edinburgh, in 1894, to explain the work and aims of the association to a number of people interested in education who were there assembled; and, as a result, the British Child Study Association was formed August, 1894, in Edinburgh, with Miss M. A. Clapperton as Honorable General Secretary.

Branches were shortly afterwards founded by Miss Louch in Cheltenham and Miss Crees in London. Subsequently branches were formed in Derby, Newcastle-on-Tyne, Manchester and Birmingham. The total number of members is upwards of 600.

The aim of the association is to interest parents, teachers and others in the systematic observation of children and young people, with a view to gaining greater insight into child nature and securing more sympathetic and scientific methods of training the young.

In 1898, chiefly through the initiative of President Holman of the London Branch, in co-operation with the various Honorable Secretaries, the Central Association, together with the Branches, was reorganized on a constitutional basis. A strong and influential central organization was formed, consisting of the following officers: President, Dr. T. S. Clouston (Edinburgh); Vice-Presidents, J. Adams, Esq. (Aberdeen), Professor P. Geddes (Edinburgh), Professor Alexander (Manchester), M. W. Keatinge, Esq. (Oxford), Miss D. Beale (Cheltenham), Professor Lloyd Morgan (Bristol), Mrs. Sophia Bryant (London), Dr. G. E. Shuttleworth (London), Professor Earl Barnes (America), Professor James Sully (London), Dr. Langdon-Down (London), Dr. Geo. Wilson (Edinburgh); Chairman of Council, Henry Holman, Esq., H. M. I. (Education Dept.); Hon. General Secretary and Treasurer, Mrs. R. Langdon-Down. Each branch manages its own local affairs through a committee, and also sends delegates to the Central Council.

Early in 1899 it was resolved that the association should found a magazine, as the organ of the British Child Study Association, and to be a medium of communication between the various branches. The magazine, entitled "The Paidologist," is to be issued thrice yearly, on April 1st, July 1st and October 1st; price 6d. each issue; Editor, Miss Mary Louch, 7 Cambray House, Cheltenham, England. A start has been made in gathering together data from various grades of schools by teachers and others for collation; which is being undertaken by several members of the association, who hope in due course to present the result of these studies before the association.

The British Child Study Association owes much of its inspiration and guidance in this field to Professor Earl Barnes, of

America, who has afforded invaluable help. The affiliated branches of the British Child Study Association are as follows:

BRANCH.	NO. OF MEMBERS.	HONORABLE SECRETARY.
Cheltenham,	170,	{ (1) Miss Mary Louch, (2) Miss R. Rooney, The Ladies' College, Cheltenham.
London,	131,	{ (1) Mrs. R. Langdon Down, (Also Hon. Gen. Sec.) 81 Harley Street, London, N. W. (2) Miss Kate Stevens, Carlisle House, Dartmouth Park Hill, London, N. W.
Edinburgh,	113,	Miss M. A. Clapperton, 2 Granton Road, Edinburgh.
Newcastle-on-Tyne,	90,	Miss M. S. Spivey, Estington Tower, Newcastle-on-Tyne.
Derby,	45,	Miss C. H. Baker, The High School, Derby.
Manchester,	30,	Miss Dendy, 8 Brook Street, Fallowfield, Manchester.
Birmingham,	25,	Miss A. J. Dawes, 44 Princess Road, Egbaston, Birmingham.

#### FRANCE.

The recent exhaustive studies of fatigue made by Professor Alfred Binet and M. Victor Henri are certainly familiar to American child study friends. Other studies, not unlike those made in the schools of New Haven by Professor Scripture, are now being made in the public schools of Paris. A recent movement in France, which seems to be assuming important dimensions, centers about the study of abnormal children. The *Revue internationale de Pédagogie comparative*, an excellent monthly edited by Auguste Mailloux at Nantes, is published in the interest of this movement. Judged by the reviews, most of the activity in child study matters in France, has

started from Lyons and been initiated by M. Gabriel Compayré, so well and so favorably known to American teachers, and the author of an important study of the child. The following letter from M. Compayré indicates briefly the present status of the movement in France. "I have but little news to give you of child study in France, as we are far behind you. I send you the result of a preliminary inquiry with four hundred pupils of primary schools in the precincts of Lyons. We commence this inquiry by suggesting a competition among the pupils of all the schools upon the same subject of French composition. The last subject proposed was this: 'Tell what you know of electric railways.' Lyons boasts of being the French capital of railways. This inquiry is not yet completed.

"My other slighter investigation which I am just beginning, but which promises some interesting results, is like this: I go into a kindergarten, have paper and pencils distributed to the children and ask them to draw for a half hour whatever they fancy; or I direct them to draw according to an outline which I give,—a man, a woman, a child, a young man, a full face, a profile, etc.

"Then again, M. Chabot has given the instructors and the public institutions of Lyons and its suburbs a *questionnaire*, on different points of pedagogical psychology. I send you this *questionnaire*, to which we have some replies already. You see that we are commencing to emulate you and to be inspired by your excellent endeavors.

"As to the rest of France, I observe but too little effort as yet. At Lille, the university has set up this year, a laboratory of education supervised by Professor Lefaire. About what is done at Paris at the laboratory of physiological psychology, under the direction of Professor Alfred Binet, *l'Année Psychologique*, whose fourth annual has appeared and with which you are doubtless familiar, will inform you very well." Since the receipt of M. Compayré's letter, the *Manuel général de l'instruction primaire*, edited by M. Ferdinand Buisson, Professor of pedagogy in the University of Paris, and well known to Americans, announces a call for the organization of a national child study society in France.

#### ITALY.

Miss Paola Lombroso, daughter of the eminent anthropologist, has been one of the most active child study workers in Italy. Her investigations, "Essays in Child Psychology," were published at Turin, in 1894. Among the topics discussed are: Mental development, morals, play, writing, composition, etc., while the value of the work is enhanced by the addition of twelve monographs upon children personally known



to and observed by the author. Miss Lombroso's book worthily extends the field of investigation opened by Ferri's earlier essays. Other studies of more or less psychological interest are those of Anfosso on "Honesty in Children" (1897), Gellini on "Children's Lies" (1894), Sergi's "Studies of the Sense of Order in School Children" (1898), which have appeared in various educational and scientific periodicals from time to time. Much of the work of Vitali also has been psychological.

Colozza's work on "The Psychology and Pedagogy of Play" (Turin, 1895,) treats the subject from the historical and psychological pedagogical points of view, discussing the various theories as to the nature and original significance of play, and reaching in conclusion two pedagogical laws, *vis.*, the teacher must not hurry on the appearance of play and a change to play of a different sort, not absolute rest, is necessary when children tire of a given play. Colozza's book is full of interest for the teacher, and he sympathizes more or less with those who seek to relieve the kindergarten of the marionettism which is so often associated with it—the *child himself* should play. Colozza has also published a study of "Inhibition" (1898).

Riccardi's "Anthropology and Pedagogy," of which only the first part has as yet appeared (Modena, 1892,) is the most ambitious contribution of the kind, dealing with the sociology of the child in and out of school. Altogether Riccardi has made 100,000 observations on over 2,000 pupils from seven to eighteen years of age in the schools of Modena and Bologna. The volume under discussion is concerned with social condition of children and parents, moral education and its effects, moral environment, family influence, interest of parents in the school, degeneracy, only children, intelligence, temperament, studiousness, attention, ambition, vanity, pride, study-preference, in all their varied relationships with each other. For Riccardi, the school is a little human society, and the children who pass into it ought to receive the best heredity the race can give. Much and most efficient work in Italy has also been done by Martino Beltrani-Scalia in the study of the physical and mental conditions of juvenile delinquents and of abandoned and neglected children. His investigations have been sociological as well as psychological.

Ottolenghi's studies on "Sensibility and Age" (1895) have shown the increase of sensibility with age and the apparent less sensibility of women. Garbini, whose study of the "Infant's Voice" appeared in 1892, has since published elaborate investigations of the "Evolution of the Color Sense" (1894), and "Evolution of the Sense of Smell" (1896). As to color sense, Garbini studied 557 children from three to six years of

age, and as to the sense of smell, 415 children of ages between three and six, the general results of all his investigations being to confirm the idea of the recapitulation of the racial history by the individual.

The most interesting of recent Italian studies in the motor field is Obici's investigations on the "Embryology of Writing" (1898), based on the school exercises of twenty-five children of both sexes in two Italian schools, from the day of entering to that of leaving. Children seem to err most in excess of movement.

Besides the extensive studies of the criminological school of Lombroso, its advocates and opponents, which have contributed so much to our knowledge of defective children and youth, the labors of Mosso, Pagliani, Livi, Riccardi, Mantegazza, Morselli, Regalia, and Sergi, have made Italian anthropological science familiar to the world outside during the past quarter of a century. Livi's monumental study of Italian soldiers appeared in 1894, since which time several investigations more akin to the child-study movement in America have been reported. The chief of these are Dr. G. Marina's "Anthropological and Ethnographic Studies on Boys" (Turin, 1896,) and "Anthropological Studies on Adults" (Turin, 1897,) and Professor Vitali's "Anthropological Pedagogical Studies" (2 vols., Forli, 1896, Turin, 1898.). Professor Vitali's investigations (anthropometric, psycho-physical, mental constitution, character, etc.,) are in the nature of a parallel study of 303 boys and 372 girls, between the ages of eleven and twenty, belonging to the district of the Romagna, and are a distinctively new contribution to the study of sex in childhood and youth. As a result of his investigation, Professor Vitali expresses himself as strongly in favor of co-education, and the production of mothers who have not ceased to grow or to learn. Dr. Marina's researches, besides giving a general *résumé* of the subject, treat in detail of over 22,000 boys (between ten and twenty years of age) and nearly 23,000 adults (from twenty to forty years), the great majority of both being Italians. Dr. Marina, as a result of his researches, refuses to believe in the existence of a criminal type anatomically characterized, and warns against the dogmatism that sees everything in one or two anatomical or physical characteristics.

Marro's comprehensive study of "Puberty in Man and Woman" (Turin, 1898,) contains a mine of valuable information, largely based on personal investigation and research, about all phenomena of sex and sexuality.

Rising above the host of pamphlets and articles which have appeared in the last few years, Ferriani's study of "Juvenile Criminals" (Turin, 1895.), which has since been translated into German, sums up the data concerning the child in relation to

crime and the criminal in an able and convincing manner. While not a hide-bound Lombrosan, Ferriani certainly sees more innate evil in the child than most German and American anthropologists seem willing to discover. Details of the criminal acts and tendencies of 2,000 young criminals coming under the observation of the author are given, and the book is one of profound interest altogether. Ferriani holds that with few exceptions the criminal carries the germ of his criminality with him out of childhood, and that during that period environment of good is of inconceivable power.

Mosso's "Physical Education of Youth" (Turin, 1894.), which has been translated into several European languages, is in many respects the best book extant on the subject of which it treats. Physician, physiologist, educator,—the author is perhaps the ablest defender of the natural method of gymnastics, free air, free limbs, free action. Most valuable, also, is the "Report of the Commission on Physical Education" (Rome, 1893.), the recommendations of which run largely in the direction of Mosso's views, the latter having, with many other distinguished men, served on the commission. Nature's methods (plays and games) are to be preferred, whenever possible.<sup>1</sup>

#### GERMANY.

American students of childhood will always owe Germany a large debt of gratitude for the splendid labors of the late Professor Preyer, the sense of whose loss is still so fresh upon us. The following communication from Dr. J. Stimpfl, professor in the State Normal School at Bamberg (Bavaria), indicates what is being done in Germany. Dr. Stimpfl, it should be noted in passing, besides having translated Sully's "Studies of Childhood" and Tracy's "Psychology of Childhood" into German, has made numerous and most acceptable contributions to the literature of pedagogy and cognate subjects in the professional reviews of his own country. He writes: "Interest in the study of child mind has increased with both psychologists and educators from year to year, and in North America in particular much has been accomplished. But the cradle of this rapidly developing science was in Germany. Here, as early as 1787, the German philosopher Dietrich Tiedemann published his "Observations on the Development of the Minds of Children." This valuable contribution to empirical psychology, however, was quite neglected, and more than half a century passed before another important work on the psychol-

<sup>1</sup> I am under great obligations to Dr. Alexander F. Chamberlain, of Clark University, Worcester, Mass., for notes on the status of child study in Italy.

ogy of childhood appeared. In 1850, Berthold Sigismund, a German physician, published his "Child and the World," whose fate was not unlike that of Tiedemann's book.

Three decades later followed the classical work by the well-known physiologist, Wilhelm Preyer: "The Mind of the Child." This book, however, has been much less influential in stimulating investigations in Germany than in foreign countries. In 1893, Preyer published a summary of his detailed and comprehensive study under the title: "Mental Development in the First Years of Childhood." Considering the wide circulation which the writings of this famous physiologist have had in the United States, it may seem altogether superfluous to mention him as a pioneer in this field.

Within ten years School Superintendent Christian Ufer has been especially zealous in arousing a deeper interest in child study in Germany. His important translations of child study literature into German have included "The Lies of Children" by G. Stanley Hall; "Differences between Normal and Abnormal Children" by Josiah Royce; "The Beginning of the Child's Mental Life" by Bernard Perez, and "Morality of Children" by Albert Schinz. He has also rendered important service to the child study cause by editing the writings of Tiedemann and Sigismund. As associate editor of *Die Kinderfehler* as well as in the contributions to child study (*Beiträge zur Kinderforschung*), he has given evidence of warm enthusiasm and comprehensive views of childhood. His own original investigations—for example: "Characteristics of the Feeble Minded," "Feeble Minded Children in the Schools," "Mental Types and Related Phenomena," as well as the excellent article on "Child Study" in Rein's *Encyclopædia of Pedagogy*—give him a recognized place as a capable investigator of child nature.

Quite recently two comprehensive and original works have appeared that are of great significance to child-study interests in Germany. In a most formidable work of more than five hundred pages Professor Karl Groos, the Basel philosopher, has treated of the plays of men, with special reference to play activities during childhood. The first section of his book, treats of the play activities of the sensory and motor apparatus, and of the higher mental qualities. The second part treats of contest, love, imitation and social plays. The point of view of Professor Groos is entirely new. He maintains that the play of youth depends on the fact that certain instincts, especially useful in preserving the species, appear before they are seriously needed, and that they are, in contrast with later serious exercise, a *preparation* and *practice* for special instincts.

William Ament has also published a noteworthy book in his "Development of the Thoughts and Speech of Children." He

has employed Preyer's method in his investigation, and his book rightly claims to represent a new and independent approach to child psychology. He outlines for the first time a complete grammar of the child's language and clearly shows that the child's early thinking can be referred back to the principles of association and reproduction. This work, like that by Groos, is of the utmost importance in the sphere of child study.

The continually growing interest in child study has brought about the translation of a considerable number of foreign child study books into German: Sully's "Studies of Childhood," translated by the writer in 1897; Baldwin's "Mental Development in the Child and the Race," translated by Dr. Ortmann in 1898, and Tracy's "Psychology of Childhood," translated by the writer the during present year.

The child has been exhaustively studied from the pathological point of view—first by the aged philosopher and pedagogue, Professor Ludwig Strümpell in his able work published in 1890 entitled: "Pedagogical Pathology, or Teachings from the Faults of Children." A work of no less importance as a pioneer in the study of pathological conditions is that by the alienist Dr. Julius Ludwig August Koch. Although concerned primarily with the study of adults, his work touches at many points the pathology of childhood. His labors have since been ably supplemented, in their applications to children, by Director Johann Trüper, both in his publications and the organization of an educational institution at Sophienhöhe (near Jena) for the care and training of backward and mentally deficient children. He is also one of the co-editors of *Die Kinderfehler*. Gustav Siegert, of Leipzig, has also made important contributions to the study of abnormal children. Besides his three large works: "Problematic Child Nature," "Periods in the Development of the Child," and "The Problem of Child Suicides," he has contributed numerous valuable short articles to Rein's Encyclopædia of Pedagogy.

Besides *Die Kinderfehler*, there are two other German reviews devoted especially to child study. In the "Sammlung von Abhandlungen aus dem Gebiete der Pädagogischen Psychologie und Physiologie," edited by Herman Schiller and Theodore Ziehen, several contributions have been made to child study, and notably Professor Ziehen's "Association of Children's Ideas." Since the first of the present year Dr. Ferdinand Kemsies has published an excellent review, devoted to the study of both normal and abnormal children, entitled "*Zeitschrift für Pädagogische Psychologie*."

At the forthcoming summer session of the University of Jena, Superintendent Christian Ufer will give six lectures on "Child Psychology from the Pedagogical Standpoint," and Director

Johann Trüper will offer six lectures on "Abnormal Children and their Educational Treatment." It is the intention to form at Jena during the session of the summer school an association for the study of children.

On the whole, however, and especially when compared with the activities in the United States, Germany lags in the rear of the great child study movement. This state of affairs is explained largely by the fact that the German universities (with the single exception of the University of Jena) have no practice schools connected with their departments of pedagogy. The lectures on pedagogy are given as secondary subjects by professors of philosophy, philology, and theology. And in the German normal schools one finds scarcely less attention given to the study of children than in the universities.

Thus, it will be seen, that the interests represented by this department of the National Education Association, have numerous representatives in the old world; although the present report on the status of child study in Europe is only partial—no attempt being made to include the accounts of the scattered movements in a half dozen countries outside of Western Europe.

## BACTERIOLOGICAL STUDY OF SCHOOL UTENSILS.

By DR. MARY L. H. ARNOLD, State Normal School,  
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During the last ten years, bacteriology has been demonstrated to be one of the most essential studies in investigations of disease, and bacteria have been shown to be the cause of the majority of diseases most dreaded by the human race, hence the relation of bacteriology to school hygiene is a point of vital interest not only to every child, but to parent, teacher, physician, and the community at large.

In January, 1897, I had made for me at the Z school, in a prominent city of California, a small jar from clay used for modeling purposes by the pupils in the public schools of that city. The model I secured was carefully placed in a sterilized test tube by means of thoroughly sterilized forceps. Later inoculations were made, followed by plate and tube cultures. As no investigation, to my knowledge, had been made in clay used for model work, I had nothing on which to base any idea as to developments.

The first piece of clay examined was from a school attended by a favored class of children, so I naturally expected but little. But on one plate culture one hundred and forty-three colonies were noted. A study was made of fifteen different micro-organisms, and fourteen other kinds were observed. The second piece of clay examined came from a school attended by the poorer class of children. In less than eleven days a plate culture showed one hundred and twenty-seven colonies, and tube cultures were made of nine.

In clean clay that had not been used by the children, study was made of five colonies, and in addition 21 different colonies were noted.

The clay having been secured in a sterile manner, and the growth of colonies having been so marked and rapid, it clearly demonstrated that clay is a well beloved home for micrococci, bacilli, oidiums. It was an absolute impossibility to secure even one pure culture from a plate culture from the first specimen made thirty-four days after the specimen was secured.

Among the colonies was one, probably the *Bacillus spiniferus*.

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<sup>1</sup> Summary of an Inaugural Dissertation. Cooper Medical College, San Francisco, California.

found on the surface of the body in cases of eczema seborrhoeicum, another resembled the *Diplococcus Albicans tardus*, and a third was the *Oidium Albicans*, the cause of thrush. It has a predilection for feeble children, and from a medical standpoint many children in large schools have constitutions inviting the invasion of such a micro-organism. If clay furnishes a source of germ development, it is more than probable that it would be a suitable camping ground for vegetable parasites as *trichophyton tinea*,—*tinea tonsurans*,—and *tinea circinata*.

On January 14th, 1897, I secured a lead pencil from the X school. The pencil was from a box containing pencils that had been collected from a class. They were kept by the teacher until used the next day. Plate and tube cultures were made from it. Great were the surprises which that harmless lead-pencil had in store.

A common practice, saving time and money, is to collect pens, pencils, and even penholders and have them kept by the teacher until used once more.

In a single plate culture from that pencil I counted 500 colonies. At least 900 or 1,000 colonies covered the Petri dish. Studies of thirteen colonies demonstrated bacilli and micrococci.

The majority of people would certainly go out of their way to avoid germs, even mythical as they are to many of the laity, yet their children meet hot beds for germ development in such pencil boxes as the one from which I secured my sample. One of the first impulses of a child when handling a pencil is to put it in the mouth. Tuberculosis, a disease dreaded by all; a disease which even legislation has considered worthy of attention; a disease owing its virulence to the tubercle bacillus, is transmitted in dried sputum. Legislation has called the attention of the public to the disease from a bacteriological standpoint, yet in the schoolroom, a second home for children, nothing has been done to prevent its spread. Since the pencil has been demonstrated to be a germ house, every pencil from the mouth of a tuberculous child is a source of the disease.

In buccal secretions, the *Bacillus* of tuberculosis has many formidable associates, the following being the most highly honored, the *Bacillus* of Friedländer, the cause of pneumonia, the *Micrococcus pneumoniae croupose*, *Bacillus Afanassiew*, supposed cause of whooping-cough, *Staphylococcus salivarius pyogenes*, noted in an abscess from subcutaneous injection of saliva from a child suffering from scarlatina anginosa, *Micrococcus tetragenus* common in phthisis, *Micrococcus* of Manfredi from sputum of croupous pneumonia following measles, *Micrococcus gingivae pyogens* and *Bacillus* of diphtheria. Sixteen other pathogenic and forty-eight non-pathogenic bacteria complete the residents of the buccal cavity. Such are the formidable



enemies liable to be on the pencil of some innocent child. Then again, many a school child has a contagious eye disease and often pauses in his task to rub his eyes with his fingers, then uses his pencil, wholly oblivious of the hidden danger in his pencil, to the hands and eyes of his playmate.

Each year large sums of money are expended in the United States in the teaching of calisthenics in our schools. These exercises, when properly taught, are most excellent, but are now given almost invariably in a room laden with not only germs found in atmosphere and dust, but also with the micro-organisms of chalk dust. In my study of chalk, cultures were made of five colonies, one of which was probably *Bacillus Venemosus*, one was a micrococcus, and the rest were bacilli. I should not be surprised if in time a bacterium producing eczema be found to have its home in crayon, for I have known cases of eczema to follow the use of crayon, and from many years experience as a mathematical teacher, I know it to be a great irritant of throat, lungs and eyes, more so, I think, than its chemical nature warrants. The piece of chalk I examined was from a room in the high school where I taught. As a rule the students belonged to people who pay attention to hygienic laws. What might we expect from a piece taken from a room in the lower grades where oft times it is collected each day!

If but due attention were paid to physical and hygienic conditions in schools, the rising generation would almost double its usefulness in the home, the school, and the world at large. The first law of hygiene is pure air and healthy environment. The results of this study show that care must be taken for the disinfection and cleanliness of school utensils. Clay is a germ hot-house. If it *must* be used, sterilize it daily for three successive days. Sterilize crayon in the same manner. If pencils and penholders *must* be collected, let them be sterilized each night. To the rules regulating the spreading of contagious and infectious diseases, add another making it compulsory that each child be provided with his own crayon, lead pencil, slate pencil, penholder, blackboard eraser, drinking cup, and if clay modeling be a part of the school work, his own clay.

#### CHARACTERISTICS OF THE CULTURES.

*No. 5. Habitat-clay. Gelatine culture.* Non-liquefying facultative anaerobic. White surface growth. Stalk with radiations.

*Potato culture.* Dirty white, feathery, dry looking. Oidium projections.

*Agar-agar culture.* Very little growth,—white. Very large oidium. *Oidium albicans.*

*No. 9. Habitat-clay. Gelatine culture.* Plate culture,—brown pink, later orange color. Dim edge surrounding a ring of deeper color, which in turn surrounded a dim center. Non-liquefying. Test tube culture. Non-liquefying, facultative anaerobic.

*Potato culture.* Deep red, orange tinge. *Very slow growth.*

*Agar-agar culture* Orange-red colony in streaks formed of drops on surface of media. Thin membrane-like blade in media. Motile micrococcus.

*l. Habitat-clean clay. Gelatine culture.* Plate culture. Light brown,—green colony, dim edge, nucleated center. Test-tube culture,—non-liquefying, chromogenic, facultative anaerobic.

*Potato culture.* Deep mustard-yellow mass, lightest near the edge. Smooth, glistening surface.

*Agar-agar culture.* Non-transparent yellow mass, surrounded by a transparent pellicle. Later was yellow on surface and in media.

Motile bacillus. Later culture showed bacillus of different arrangement.

*k. Habitat-lead-pencil. Gelatine culture.* Plate culture,—circular, light canary-yellow colony. Test tube culture,—liquefying anaerobic.

*Potato culture.* Thick colony, compact, yellow. Later it was yellowish green. Consistency of very thick cream. Would stretch, but would not adhere to needle.

*Agar-agar culture.* Small white streak at site of puncture.

Very small, motile bacillus.

*m. Habitat-lead-pencil. Gelatine culture.* Plate culture,—pure white. Grew in myriads. Test tube culture,—facultative anaerobic, at first non-liquefying, later slowly liquefying.

*Potato culture.* Pure white.

*Agar-agar culture.* Milk-white, tinged surface growth.

Very small bacillus.

*No. V. (Bacillus Abramsi) Habitat-chalk. Gelatine culture.* Plate culture,—dim, irregular colony with flat, uneven surface. Growth in test tube,—non-chromogenic, non-liquefying, facultative anaerobic. At first, surface growth was colorless, later almost white, and resembled ground glass. Long dotted transparent compound stalk with fringed edge was in the media.

*Potato culture.* Most peculiar liquid dirty-white colony.

*Agar-agar culture.* Watery-white surface growth of dim dots of varying size and density. Transparent, membranous stalk in media.

Slightly motile bacillus.

## BIBLIOGRAPHY OF CHILD STUDY

For the year 1898.

By LOUIS N. WILSON, Librarian, Clark University.

1. **Adersen, H.** (On growth in height and mental derangements in childhood.) Nordiskt Med. Arkiv. 1898. Vol. 31, pp. 39.
2. **Aicard, Jean** L'âme d'un enfant. E. Flammarion, Paris, 1898. pp. 384.
3. **Alden, Annie Fields** My Collection of Dolls. Ladies' Home Journal, Nov., 1898. Vol. 15, p. 17; Dec., 1898; Jan., 1899. Vol. 16, pp. 13 and 19.
4. **Allport, Frank** The eyes and ears of school children. Reprint. The author, 92 State St., Chicago, Ill. pp. 30.  
Contains, also, articles on Refraction in Schools; Defective Eyesight in American Children; Tests for Defective Vision in School Children; Physical Defects in Pupils.
5. ——— Report of eye examinations in the Minneapolis public schools. Jour. of Am. Med. Ass., 1898. Vol. 30, pp. 207-211.
6. **Altenburg, Oskar** Die Kunst des psychologischen Beobachtens. Praktische Fragen der pädagogischen Psychologie. Samml. v. Abh. a. d. Geb. d. Päd. Psy. u. Physiol. Band 2, Heft 3, 1898. pp. 76.  
Contains interesting items concerning the effect of environment, family life, etc., on the child before entering school.
7. **Alvarez, B. Gonzales** Anatomia y fisiologia especiales del niño de su alimentacion y crecimiento y preliminares de clinica pediátrica. Carrion Hermanos, Madrid, 1895. pp. 344.  
A good *résumé* of the anatomy and physiology of childhood, with original contributions. The best book in Spanish on the subject.
8. **Aly, Max Voigt** Die Welt im Munde. Frankfurt, A. M., 1898. pp. 87.  
Practical rules for the care of the teeth and mouth.
9. **American, Sadie** Child training by the Froebel system. The Woman's Home Companion, N. Y. Sept., 1898. Vol. 25, No. 6, p. 12.
10. ——— The movement for small play grounds. Am. Jour. of Sociology, Sept. 1898. Vol. 4, pp. 159-170.
11. ——— The movement for vacation schools. Am. Jour. of Sociology, Nov., 1898. Vol. 4, pp. 309-325.

12. **Atkinson, Fred. W.** A year's study of the entering pupils of the Springfield, Mass., high school. Proc. N. E. A., 1898. pp. 903-910.  
A suggestive application of child study to secondary education.
13. **Austin, Ellen M.** Child study in the high school. North Western Monthly, March, 1898. Vol. 8, pp. 487-490.
14. **Baginsky, Adolf and Janke, Otto** Handbuch der Schul-Hygiene zum Gebrauche für arme Sanitätsbeamte, Lehrer, Schul-Vorstände und Techniker. F. Enke, Stuttgart, 1898. Vol. 1, pp. 748.
15. **Bailey, T. P.** Child Study and Ethology. North Western Monthly, Nov. 1897; Jan. 1898. Vol. 8, pp. 250-256; 370-375.
16. **Baker, Seth** Fatigue in school children. Ed. Review, Jan., 1898. Vol. 15, pp. 34-39.  
A brief statement of some of the premonitions of fatigue.
17. **Baldwin, J. Mark** The story of the mind. D. Appleton & Co., N. Y., 1898. pp. 236.  
The fourth chapter discusses the mind of the child.
18. **Balliet, Thomas M.** Value of motor education. Jour. of Education, Nov. 17, 1898. Vol. 48, p. 317.
19. ——— School Baths. Jour. of Education Oct. 20, 1898. Vol. 48, pp. 251-252.
20. **Barnes, Earl** Childish ideals. North Western Monthly, Oct., 1898. Vol. 9, pp. 91-93.  
One of the very few comparisons between the English and the American child that are of any value.
21. ——— The way young children think: a study of their pictures. Child Life (London), June, 1898. Vol. 1, pp. 120-122.  
Application of recent studies in children's drawings to the Kindergarten.
22. ——— Effect of social ideas on choice of occupation. Jour. of Education, Sept. 8, 1898. Vol. 48, pp. 155-156.  
A brief study of the ambitions of English school children.
23. ——— Corporal punishment in England. Education, Oct., 1898. Vol. 19, pp. 72-75.  
Corporal punishment discussed with special reference to juvenile delinquents.
24. ——— Corporal punishment as a means of social control. Education, March, 1898. Vol. 18, pp. 387-395.  
A study of discipline in English schools.
25. **Barr, M. W.** The training of mentally deficient children. Pop. Sci. Mo., Aug., 1898. Vol. 53, pp. 531-535.
26. **Bastian, H. C.** Aphasia and other speech defects. Lewis, London, 1898. pp. 314.
27. **Baumann, Julius** Ueber Willens—und Charakterbildung auf physiologisch—psychologischer Grundlage. Samml. von Abh, a. d. geb. d. Paed. Psy. u. Physiol. Vol. 1, Hft. 1. Reuther u. Reichard, Berlin, 1897. pp. 86.

28. **Bayr, Emanuel** Über Beleuchtungsversuche in Lehrzimmern. *Zeit für Schulgesundheitspflege*, March, 1898. Vol. II, pp. 129-160.  
An exhaustive study of the lighting of school rooms.
29. **Beach, Fletcher** Insanity in children. *Jour. of Mental Sci.*, July, 1898. Vol. 44, pp. 459-473.
30. **Beale, Dorothy** (and others) *Work and play in girls' schools.* Longmans, Green & Co., London, 1898. pp. 433.  
A comprehensive presentation of the ways and means of educating maturing girls.
31. **Bellianine, C.** *Troubles de la parole dans l' hémiplegie infantile.* Maloine, Paris, 1898. pp. 33.
32. **Bergen, F. D.** Notes on the theological development of a child. *Arena*, 1899. Vol. 19, pp. 254-266.
33. **Bergey, D. H.** *School architecture. Heating, ventilation, lighting, and sanitary arrangements.* *Proc. N. E. A.*, 1898. pp. 524-534.
34. **Berthelemy, H.** *La répression des violences commises envers les enfants.* *Rev. Pédagogique*, April, 1898. Vol. 32, pp. 289-302.
35. **Binet, A., et Henri, V.** *La fatigue intellectuelle.* Schleicher Freres, Paris, 1898. pp. 338 and 3 plates.  
An excellent presentation of the physiological and psychological effects of mental overwork; presents the results of many investigations carried on in France, Germany, Italy, and America.
36. **Binet, A., and Vaschide, N.** *La psychologie à l'école primaire. Expériences de force musculaire et de fond chez les jeunes garçons. Épreuves de vitesse chez les jeunes garçons. Expériences sur la respiration et la circulation du sang chez les jeunes garçons. Mesures anatomiques chez 40 jeunes garçons. Échelle des indications données par les différents tests. Corrélation des épreuves physiques. La mesure de la force musculaire chez les jeunes gens. La force de pression de la main, la traction, la corde lisse, le saut. Expériences de vitesse chez les jeunes gens. Données anatomiques, capacité vitale et vitesse du coeur chez 40 jeunes gens. Échelle des indications données par les tests. Corrélation des tests de force physique.* *Année Psychol.*, 1897. Vol. 4, pp. 1-244.
37. **Bluhm, R.** *Die Schulparkassen in Frankreich.* *Deuts-Zeits, f. Ausl. Unterr.*, Jan., 1898. Vol. 3, pp. 115-125.
38. **Blum, E.** *Le mouvement pédologique et pédagogique.* *Rev. Philos.*, Nov. 1898. Vol. 46, pp. 504-518.  
Review of literature of child study.
39. **Boas, Franz** *The growth of Toronto children.* Report Comm. of Ed., 1896-97. Washington, 1898. Vol. 2, pp. 1541-1599.  
Besides giving the growth of the Toronto children the paper discusses the influence of the order of birth on development.

40. **Bohannon, E. W.** The only child in a family. *Ped. Sem.*, April, 1898. Vol. 5, pp. 475-496.
41. **Bolton, T. L., and Haskell, Ellen, M.** Knowledge from the standpoint of association. *Ed. Review*, May, 1898. Vol. 15, pp. 474-499.
42. **Bon, L. C.** Les châtimens corporels dans les écoles allemandes. *Rev. Pédagogique*, Jan., 1898. Vol. 32, pp. 59-65.
43. **Bradford, E. H.** (and others) The education of crippled children. *American Physical Education Review*, September, 1898. Vol. 3, pp. 188-207.  
A series of articles on the care and training of deformed and crippled children.
44. **Brauckmann, K.** Behinderte Nasenatmung. *Rein's Ency. Handb. d Pädagogik*. Vol. 5, pp. 6-12.
45. ——— Ohrenkrankheiten. *Rein's Ency. Handb. d Pädagogik*. Vol. 5, pp. 121-124.
46. **Brinton, D. G.** The factors of heredity and environment in man. *Am. Anthropologist*, Sept., 1898. Vol. 11, pp. 271-277.  
Gives an excellent idea of the disagreement of eminent authorities as to the rôle of these factors. Emphasizes the rôle of character and temperament.
47. **Brodeur, Clarence A.** Child study in Westfield and vicinity. *Jour. of Education*, Jan. 6, Jan. 20, Feb. 3 and March 17, 1898. Vol. 47.
48. **Brower, Daniel R.** The judicious training of neurotic children an aid to the prevention of insanity. *Proc. of the Am. Med.-Psy. Assn.* 54th annual meeting, St. Louis, Mo., May 10-13, 1898. Vol. 5, pp. 143-146.
49. **Brown, Ernest N.** Child study. *Educational Record*, Province of Quebec, Montreal, March, 1898. Vol. 18, pp. 51-63.  
Discusses the subject from the teachers' point of view.
50. **Bruns, L.** Hysteria in children. *Alienist and Neurologist*, July, 1898. Vol. 19, pp. 373-430.
51. **Bryant, Sophie** The teachings of morality in the family and school. *Macmillan Co.*, N. Y., 1897. pp. 146.  
Very general.
52. **Bucher, M. K.** Arbeit und Rhythmus. *Allg. Phil. Hist. Classe Sächs. Ges. der Wiss.* Bd. 17, No. 5, Leipzig, 1896. pp. 130.  
An important and fascinating monograph. Rhythm is born of the "intoxication of work."
53. **Buchner, E. F.** Reports of child study at state teachers' associations. *North Western Monthly*, Feb., 1898. Vol. 8, pp. 429-431.
54. **Buck, Winifred** Boys' Clubs. *N. A. Review*, Oct., 1898. Vol. 167, pp. 509-512.

55. **Buisson, F.** L'école primaire en France et la part de responsabilité dans l'éducation morale du pays. *Rev. Pédagogique*, Feb., 1898. Vol. 32, pp. 121-134.
56. **Burk, Frederic** The graded system vs. individual pupils. *North Western Monthly*, March, 1898. Vol. 8, pp. 481-484.
57. ——— Growth of children in height and weight. *Am. Jour. of Psy.*, April, 1898. Vol. 9, pp. 253-326.  
An excellent summing up of work done in this field. Gives a bibliography of 109 titles.
58. ——— Physical measurements. *North Western Monthly*, May, 1898. Vol. 8, pp. 586-588.
59. ——— From Fundamental to accessory in the development of the nervous system and of movements. *Ped. Sem.*, Oct., 1898. Vol. 6, pp. 5-64.
60. **Burke, Mrs. B. Ellen** Children's secrets. *Trans. Ill. Soc. for Child Study*, April, 1898. Vol. 3, pp. 56-61.
61. **Burkhard, P.** Die Fehler der Kinder. Nemnich, Karlsruhe, 1898. pp. 102.
62. **Burnham, Wm. H.** Bibliography of school hygiene. *Proc. N. E. A. for 1898.* pp. 505-523.  
A select list of 436 titles with a few descriptive and critical notes.
63. **Burton, Richard** Literature for children. *N. A. Review*, Sept., 1898. Vol. 167, pp. 278-286.
64. **Calkins, Mary Whiton** Short studies in memory and association. *Psychol. Rev.*, Sept., 1898. Vol. 5, pp. 451-462.  
A study of the immediate and of the delayed recall of the concrete and of the verbal.
65. **Camerer, Wilhelm** Der Stoffwechsel des Kindes von der Geburt bis zur Beendigung des Wachstums meist nach eigenen Versuchen dargestellt. Zweite Ausgabe mit Ergänzungen. H. Laup'schen Buchhandlung, Tübingen, 1896. pp. 160.  
An important study of assimilative and excretive processes.
66. **Canton, William W. V.** Her book and various verses. Stone & Kimball, N. Y., 1898. pp. 146.  
Records of very 'cute doings and sayings of a child, with the author's poetic elaboration of some of them.
67. **Carlier, Jules** Les colonies scolaires et "l'œuvre du grand air" de Bruxelles. *Rev. Pédagogique*, Jan., 1898. Vol. 32, pp. 42-52.
68. **Carson, J. C.** The importance of a high grade of physical health in feeble-minded inmates of public institutions, with a view to their right development, and the best method of securing such health. Reprint from 31st Annual Report, N. Y. State Board of Charities, Jan. 24, 1898. pp. 10.
69. **Carter, Marion H.** Darwin's idea of mental development. *Am. Jour. of Psy.*, July, 1898. Vol. 9, pp. 534-559.

70. — — Educational paper dolls. *Jour. of Pedagogy*, April, 1898. Vol. 11, pp. 133-144.  
An excellent exposition of the use to be made of paper dolls in the study of myths, history, and literature.
71. **Chamberlain, Alex. F.** The lesson of "the little child." *North Western Monthly*, Feb., 1898. Vol. 8, pp. 435-439.
72. **Chase, Susan F.** Choice of reading for the early adolescent years. *Proc. N. E. A.*, 1898. pp. 1011-1015.
73. **Chrisman, Oscar** The secret language of children. *North Western Monthly*, Jan. and June, 1898. Vol. 8, pp. 375-379; 949-651.
74. — — Results of child study. *Education*, February, 1898. Vol. 18, pp. 322-332.  
Based on replies to a questionnaire sent to teachers.
75. — — Religious ideas of a child. *Child Study Mo.*, March, 1898. Vol. 3, pp. 516-528.
76. — — Paidology, the science of the child. *Ed. Rev.*, March, 1898. Vol. 15, pp. 269-285.  
A summary of the author's dissertation submitted to the University of Jena for the degree of Doctor of Philosophy.
77. — — The secret language of childhood. *Century*, May, 1898. Vol. 56, pp. 54-58.
78. — — Religious periods of child-growth. *Ed. Rev.*, June, 1898. Vol. 15, pp. 40-48.
79. — — Child and parent. *North Western Monthly*, Nov., Dec., 1898. Vol. 9, pp. 135-138; 180-183.
80. **Clapp, Henry L.** School gardens. *Pop. Sci. Mo.*, Feb., 1898. Vol. 52, pp. 445-456.
81. **Coe, George A.** The morbid conscience of adolescents. *Trans. Ill. Soc. for Child Study*, Oct., 1898. Vol. 3, pp. 97-108.
82. **Cohn, Hermann** Die Schulartz frage in Breslau. *Zeit. für Schulgesundheitspflege*, Nov. 1898. Vol. 11, pp. 579-596.
83. **Collins, Joseph** The genesis and dissolution of the faculty of speech: a clinical and psychological study of aphasia. *Macmillan Co.*, N. Y., 1898. pp. 432. O d  
The most valuable treatment of speech disturbances to be found in the English language.
84. **Collins, Patti Lyle** What children ask of Santa Claus. *Ladies' Home Journal*, Dec., 1898. Vol. 16, p. 31. O d
85. **Colozza, G. A.** Del potere dell'inibizione; nota di pedagogia. *Paraira, Roma*, 1898. pp. 128.  
A good study of inhibition.
86. **Compayré, Gabriel** Saturday teachers' class at the West-field normal school. *Education*, Feb., 1898. Vol. 18, pp. 261-264.  
The translation of an article published in *Manuel Général de l'Instruction Primaire (Paris)*, for Oct. 16, 1897.



87. **Core, E. B.** Getting good pictures of children. *Ladies' Home Journal*, Feb., 1898. Vol. 15, No. 3, p. 13.
88. **Curtis, Henry S.** Inhibition. *Ped. Sem.*, Oct. 1898. Vol. 6, pp. 65-113.
89. **Curtis, H. S., and Partridge, G. E.** Child study in connection with the vacation schools. Report on the vacation schools and playgrounds, N. Y. City. Borough of Manhattan and the Bronx, 1898. pp. 51-97.
90. **Curtiss, Frank Homer,** Some investigations regarding loss in weight and gain in height during sleep. *Am. Phys. Ed. Rev.*, December, 1898. Vol. 3, pp. 270-273.
91. **Darrah, Estelle M.** A study of children's ideals. *Pop. Sci. Mo.*, May, 1898. Vol. 53, pp. 88-98.  
An excellent statistical study of children's estimate of character..
92. **Dawson, Geo. E.** Child study. A series of articles in the *International Evangel*, Sept., 1897 to Sept., 1898.
93. **Defert, Louis** L'enfant et l'adolescent dans la société moderne. Préface de M. Th. Roussel. Montgrédien et Cie, Librairie Illustrée, Paris, 1898. pp. 221.  
A popular work, devoted chiefly to infancy. Author maintains absolute neutrality, seeks only to present facts.
94. **Delabarre, E. B.** A method of recording eye movements. *Am. Jour. of Psy.*, July, 1898. Vol. 9, pp. 572-574.
95. **Delpench, A.** La période prépubère. *Presse Méd.*, Paris, 1898. Vol. 2, pp. 89-94.
96. **Delvaille, C.** L'hygiène scolaire au congrès international d'hygiène de Madrid. *Rev. Pédagogique*, Aug., 1898. Vol. 33, pp. 115-126.
97. **Demolins, Edmond** Anglo-Saxon superiority: to what it is due. R. F. Fenno & Co., N. Y., 1898. pp. 343.  
In part I, asks whether the French, German and English school system forms men, and how to bring up our children.
98. **Deucker, R.** Das Kind und die geschlechtliche Entwicklung. Spohr, Leipzig, 1898. pp. 36.
99. **Dewey, John** Some remarks upon the psychology of number. *Ped. Sem.*, Jan., 1898. Vol. 5, pp. 426-434.
100. **Dexter, Edwin G.** The child and the weather. *Ped. Sem.*, April, 1898. Vol. 5, pp. 512-522.  
See, also, *North Western Monthly*, Oct., 1898. Vol. 9, pp. 93-97.
101. **Dieckhoff, Chr.** Die Psychosen bei psychopathisch-minderwertigen. *Allg. Zeits. f. Psychiat.*, 1898. Vol. 55, pp. 215-250.
102. **Dinsmore, J. W.** Running away. *North Western Monthly*, Dec., 1898. Vol. 9, pp. 183-186.
103. **Dodd, C.** A study in school children. *National Rev.*, 1898. Vol. 32, pp. 66-74.

104. **Donath, Julius** Die Anfänge des menschlichen Geistes. Fest-Vortrag, gehalten in der Jahresversammlung der Gesellschaft der Budapester Hospitalsärzte, am 29. Dezember, 1897. Stuttgart, F. Enke, 1898. 47 s.  
A very interesting discussion of the mind of the child in relation to the savage and the race.
105. **Du Bois, Patterson** The Sunday school as a force. North Western Monthly, Feb., 1898. Vol. 8, pp. 439-442.
106. **Elliott, Della M.** Use of the voice in teaching. Am. Phys. Ed. Rev., Sept., 1898. Vol. 3, pp. 216-219.
107. **Ellis, A. Caswell** Play in education. North Western Monthly, Nov., 1898. Vol. 9, pp. 140-143.
108. **Ellis, Havelock** Auto-erotism: A psychological study. Alienist and Neurologist, April, 1898. Vol. 19, pp. 260-299.  
A thorough general study of some sex-phenomena.
109. **Erdmann, Benno und Dodge, Raymond** Psychologischen Untersuchungen über das Lesen auf experimenteller Grundlage. Niemeyer, Halle A. S., 1898. pp. 360.  
Considers rest and motion of the eye in reading. Gives descriptions of apparatus.
110. **Evellin, F.** Rapport sur l'enseignement de la morale dans les écoles primaires de l'academie de Paris. Rev. Pédagogique, Feb., 1898. Vol. 32, pp. 97-120.
111. **Fail, Delos** School diseases and medical inspection. Proc. N. E. A., 1898. pp. 534-544.
112. **Fauth, Franz** Das Gedächtnis, Samml. von Abh. a. d. geb. d. Paed. Psy. u. Physiol. Band 1, Heft 5. Reuter & Reichard, Berlin, 1898. pp. 88.
113. **Felker, Allie M.** Play as a means of idealizing and extending the child's experience. Proc. N. E. A., 1898. pp. 624-632.
114. **Féré, Ch.** La famille neuropathique. 2d ed. F. Alcan, Paris, 1898.  
Valuable as a guide to the literature of the subject. Large list of authors cited.
115. **Ferrari, G. C.** Manifestazioni artistiche accessuate in una bambina. Archiv. di Psichiat., 1898. Vol. 19, pp. 238-256.
116. **Fitz, Geo. W.** The hygiene of instruction in primary schools. Proc. N. E. A., 1898. pp. 544-550. Also, in Am. Physical Ed. Rev., Dec., 1898. Vol. 3, pp. 242-248.  
A strong plea for the correlation of mental and physical development.
117. **Fletcher, Horace** That lost waif or social quarantine, Chicago: Kindergarten Literature Co., 1898. pp. 270.  
A study of neglected and abandoned children.
118. **Freud, S.** Die infantile Cerebrallähmung. Hölder, Vienna, 1897. pp. 327.

119. **Galbreath, Louis H.** The study of children by teachers. *North Western Monthly*, April, 1898. Vol. 8, pp. 541-544.
120. ——— Child study for class work. *Trans. Ill. Soc. for Child Study*, April, 1898. Vol. 3, pp. 18-28.
121. ——— Child study in the art of teaching. *Journal of Pedagogy*, July, 1898. Vol. 11, pp. 237-252.  
Discusses some of the more direct pedagogic bearings of child study.
122. ——— Practical course in child study for teachers. *Trans. Ill. Soc. for Child Study*, Oct., 1898. Vol. 3, pp. 153-170.
123. **Gailaudet, E. M.** The deaf and their possibilities. *Proc. N. E. A.*, 1898. pp. 207-214.
124. **Gates, Fanny B.** Musical interests of children. *Journal of Pedagogy*, October, 1898. Vol. 11, pp. 265-284.  
A statistical study of the song preferences of 2000 school children with the reasons for preferences; also, discusses briefly the music sense among primitive people.
125. **Gattel, F.** Ueber die sexuellen Ursachen der Neurastheni u. Angstneurose, Hirschwald, Berlin, 1898. pp. 68.
126. **Gélineau, ———** Hygiène de l'oreille et des sourds. Maloine, Paris, 1897. pp. 127.
127. **Gilles, L.** Du calcul de la mortalité des enfants placés en nourrice. *Gy. Ronen*, 1898. pp. 20.  
**Gonzales-Alvarez, B.** See **Alvarez, B. Gonzales**
128. **Gordy, J. P.** What can child study contribute to the science of education? *Proc. N. E. A.*, 1898. pp. 348-354.
129. **Götze, C.** Das Kind als Künstler, Hamburg. *Lehrervereinigung für die Pflege der künstlichen Bildung*, 1898. pp. 36 and 8 plates.  
Summarizes the results of inductive studies on children's drawings.
130. **Gould, George M.** Child fetiches. *Ped. Sem.*, Jan., 1898. Vol. 5, pp. 421-425.
131. **Griffith, E. W.** Interest from the child study point of view. *Child Study Monthly*, Nov. 1898. Vol. 4, pp. 285-287.
132. **Groos, Karl** The play of animals (Trans. by Elizabeth L. Baldwin). D. Appleton & Co., N. Y., 1898. pp. 341.  
Although dealing primarily with the play instinct in animals there is much in the book bearing on the plays of children.
133. ——— Uber die Necklust. *Die Kinderfehler*, March, 1898. Vol. 3, pp. 33-39.  
An account of the teasing and bullying instincts of children.
134. **Groszmann, M. P. E.** Language teaching from a child study point of view. *Child Study Monthly*, Nov., 1898. Vol. 4, pp. 266-278.
135. **Gulick, Luther** The religion of boys. *The Association Outlook*, Springfield, Mass. Vol. 8, pp. 33-48.

136. — — Sex and religion. Series of articles published during 1897-98, in *Association Outlook*, Springfield, Mass.
137. — — Some psychical aspects of muscular exercise. *Pop. Sci. Mo.*, Oct., 1898. Vol. 53, pp. 793-805.  
An admirable statement of the psychological basis of play.
138. **Gutzmann, H.** *Das Stottern*. Rosenheim, Frankfort a. M., 1898. pp. 467.
139. **Haddon, Alfred C.** *The study of man*. G. P. Putnam's Sons, N. Y., 1898. pp. 410.  
Contains chapters on measurements and their importance in anthropometry, toys and games, and the singing, counting and funeral games.
140. **v. Hagen, Karl** *Die Geschlechts-Bestimmung des werdenden Menschen und was wir über die geschlechtliche Vorausbestimmung wussten und wissen*. H. Steinitz, Berlin, 1898. pp. 60.
141. **Hall, G. Stanley** Some aspects of the early sense of self. *Am. Jour. of Psy.*, April, 1898. Vol. 9, pp. 321-395.
142. — — New phases of child study. *Child Study Monthly*, May, 1898. Vol. 4, pp. 35-40.  
A brief statement of some characteristics of adolescence.
143. — — Initiations into adolescence. *Proc. Am. Antiq. Soc.*, Worcester, Mass., Oct. 21, 1898. Vol. 12, pp. 367-400.
144. — — The love and study of nature: a part of education. *Agriculture of Mass.*, 1898. pp. 134-154.  
Lectures delivered before the Mass. State Board of Agriculture at Amherst, Dec. 6, 1898. Treats of child's attitude toward nature.
145. — — Topical Syllabi, 1898-99. I. The organizations of American Student Life with Henry D. Sheldon; II. Mathematics in Common Schools, with E. B. Bryan; III. Mathematics in the Early Years, with E. B. Bryan; IV. Unselfishness in children, with Willard S. Small; V. The Fooling Impulse in Man and Animals, with Norman Triplett; VI. Confession, with Erwin W. Runkle; VII. Pity; VIII. Perception of Rhythm by Children, with Chas. H. Sears.
146. **Hall, Jeanette W.** The period of adolescence. *Child Study Monthly*, June, 1898. Vol. 4, pp. 68-82.  
Contains a bibliography of 21 titles but most of the references are incomplete.
147. **Halleck, Reuben Post** Some contributions of child study to the science of education. *Proc. N. E. A.*, 1898. pp. 254-262.
148. — — The education of the motor centers. *Trans. Ill. Soc. for Child Study*, April, 1898. Vol. 3, pp. 46-55.
149. **Hancock, John A.** Children's tendencies in the use of written language forms. *North Western Monthly*, June, 1898. Vol. 8, pp. 646-649.

150. **Haney, James P.** The hundredth child. Reprint from the Teachers' Quarterly, N. Y. City, 1898. pp. 13.
151. **Harris, William T.** (and others) The psychology of the initiative functions in childhood as related to the process of learning. Rep. Comm. of Ed. for 1896-97. Vol. 1, pp. 676-681.
152. ——— Effect of exercise on the vital organs. Proc. N. E. A., 1898. pp. 930-933.
153. **Hartwell, Edward M.** School hygiene—what it is and why we need it. Proc. N. E. A., 1898. pp. 498-505.  
**Haskell, Ellen M.** See Bolton and Haskell (No. 41).
154. **Henle, C.** Untersuchungen über die Zähne der Völkschuler zu Hamar in Norwegen. Zeit. für Schulgesundheitspflege, Feb. 1898. Vol. 11, pp. 65-71.  
A careful investigation of the condition of the teeth of the school children in a Norwegian town of 5000 inhabitants.
155. **Henri, Victor and Catherine** Earliest recollections. Pop. Sci. Mo., May, 1898. Vol. 53, pp. 108-115.  
Reminiscent study of childhood.
156. **Hogan, Louise A.** A study of a child. Harper & Bro., N. Y., 1898. pp. 220.  
A rather diffuse history of a child during the first seven years of its life. Illustrated.
157. **Holmes, Manfred J.** Apperception and child study. Trans. Ill. Soc. for Child Study, Oct., 1898. Vol. 3, pp. 145-152.
158. **Hrdlicka, Ales** Report on anthropological work in the state institution for feeble-minded children, Syracuse, N. Y. Supplemental to 48th Annual Report, 1898. pp. 98.
159. ——— Anthropological investigations on 1000 white and colored children of both sexes. 47th Annual Report, N. Y. Juvenile Asylum. State Printers, N. Y. and Albany, 1899. pp. 86.  
An excellent piece of work. Commendable for its conservative tone.
160. ——— The medico-legal aspect of the case of Maria Barbella. State Hospitals' Bulletin, Utica, N. Y., April, 1897. pp. 1-87, with 2 charts and 19 figures.
161. **Huey, Edmund B.** Preliminary experiments in the physiology and psychology of reading. Am. Jour. of Psy., July, 1898. Vol. 9, pp. 575-586.
162. **Hugh, D. D.** Formal education from the standpoint of physiological psychology. Ped Sem., April, 1898. Vol 5, pp. 599-605.
163. **Itard, ———** Rapports et mémoires sur le sauvage de l'Aveyron, l'idiotie et la surdi-mutité. Avec une appréciation de ces rapports par Delasiauve. Préface par Bourneville. Eloge d'Itard par Bouquet. Félix Alcan, Paris, 1894. pp. 144.  
A reprint, with notes and introduction, of a classic.

164. **Ireland, William W.** The mental affections of children, idiocy, imbecility, and insanity. J. & A. Churchill, London, 1898. pp. 442.  
An authoritative work on the care and training of mentally deficient children.
165. **Jacobi, Mary Putnam** Care of the adolescent girl. The Mother's Voice, Jan., 1898. Vol. 2, pp. 2-3; 13-15.
166. **Jegi, John I.** Children's ambitions. Trans. Ill. Soc. for Child Study, Oct., 1898. Vol. 3, pp. 131-144.  
Treats of German children in Milwaukee. Conservative in general tone, and valuable.
167. **Johnson, George E.** Play in physical education. Proc. N. E. A., 1898. pp. 948-958.
168. **Juvenile Offenders.** A report based on an inquiry instituted by the committee of the Howard Association. Wertheimer, Lea & Co., London, 1898. pp. 39.  
The opinions are almost universally opposed to imprisonment and in favor of whipping.
169. **Kemsies, Ferdinand** Arbeitshygiene der Schule auf Grund von Ermüdungsmessungen. Samml. v. Abh. a. d. Geb. d. Päd. Psy. u. Physiol. Band 2, Heft I, 1898. pp. 64.  
A study of the effect of fatigue on the quality and quantity of mathematical work made by means of the ergograph.
170. **Keyes, Chas. H.** What can child study do for our schools? North Western Monthly, June, 1898. Vol. 8, pp. 641-644.  
Abstract of an address before meeting of the Conn. Teachers' Ass'n, Willimantic, Conn., May 6, 1898.
171. **Kiernan, James G.** The periods of stress in childhood. Trans. Ill. Soc. for Child Study, Oct., 1898. Vol. 3, pp. 91-96.
172. **Kirkpatrick, E. A.** The problem of children's reading. North Western Monthly, June, 1898. Vol. 8, pp. 651-654.
173. — — Children's reading I. North Western Monthly, Dec., 1898. Vol. 9, pp. 188-191.
174. — — Defects in the eyes of children. State Normal School, Fitchburg, Mass., 1898. pp. 7.  
A little pamphlet sent out to parents of children whose eyes are found defective.
175. **Kittredge, F. E.** Adenoids and their complications in children. N. Y. Med. Jour., Nov. 12, 1898. Vol. 68, pp. 702-706.
176. **Kline, Linus W.** Truancy as related to the migrating instinct. Ped. Sem., Jan., 1898. Vol. 5, pp. 381-420.
177. — — The migratory impulse vs. love of home. Am. Jour. of Psy., Oct., 1898. Vol. 10, pp. 1-81.
178. **Knapp, Ludwig** Der Scheintod der Neugeborenen. Braumüller, Wien u. Leipzig, 1898. pp. 163.  
Largely on the development of the various methods of reanimating apparently dead new born children. Bibliography of 13 pp.

179. **Kohlbrugge, I. H. F.** *Der Atavismus.* Scrineriüs, Utrecht, 1897. pp. 31.
180. **Krauss, W. C.** The stigmata of degeneration. *Am. Jour. of Insanity*, July, 1898. Vol. 55, pp. 55-88.
181. **Kraus-Boelte, Maria** The development of the inner life of the child. *Proc. N. E. A.*, 1898. pp. 608-614.
182. **Krohn, William O.** Minor mental abnormalities in children as occasioned by certain erroneous school methods. *Child Study Monthly*, Oct., 1898. Vol. 4, pp. 201-214.
183. **Kuhn, Maurice** Les enfants dégénérés dans les écoles publiques. *Rev. Pédagogique*, Jan., 1898. Vol. 32, pp. 53-58.  
Translation and discussion of a paper on feeble-minded children in the public schools, by Will S. Monroe.
184. **Laing, Mary E.** An inductive study of interest. *Ed. Review*, Nov., 1898. Vol. 16, pp. 381-390.
185. **Lancaster, E. G.** The vanishing character of adolescent experiences. *North Western Monthly*, June, 1898. Vol. 8, pp. 644-646.
186. **Lang, Ossian H.** Some cautions to be observed in child study. *Proc. N. E. A.*, 1898. pp. 898-902.
187. **Law, Frederick H.** Age at which children leave school. *Ed. Rev.*, Jan., 1898. Vol. 15, pp. 40-49.  
Discusses the extent of school training of children in N. Y. City.
188. **Lay, W. A.** *Führer durch den Rechtschreibunterricht.* Nemnich, Karlsruhe, 1897. pp. 230.  
Contains an account of important investigations in regard to spelling.
189. **Lay, Wilfred** Mental imagery. Experimentally and subjectively considered. *The Psychol. Review Monograph Supp.* Vol. 2, No. 3, May, 1898. pp. 59.
190. **Leclère, A.** Description d'un objet. *L'Année Psychol.*, 1897. Vol. 4, pp. 379-389.
191. **Lemox, D., and Sturrock, A.** The elements of physical education. A teacher's manual. Wm. Blackwood & Sons, London, 1898. pp. 241.  
A practical and interesting book.
192. **Letchworth, Wm. Pryor** Dependent children and family homes. *The Sanitarian*, N. Y., Jan., 1898. Vol. 40, pp. 3-14.
193. **Lietz, Hermann** *Emlohstobba.* Berlin, 1897. pp. 192.
194. **Loeper, F.** Ueber Organisation von Hilfsschulen. *Die Kinderfehler*, Nov., 1898. Vol. 3, pp. 167-177.  
A discussion of the question of separate classes for the mentally dull.
195. **Lombroso, Paolo** (The logical consistency of the ideas of children) *Voprosi Philos.* Moscow, Jan., Feb.; Mch., Apr., 1898. Year 9, pp. 23-40; 99-110.

- Luckey, G. W. A.** (See Child Study Department, North Western Monthly, 1898. Lincoln, Neb.)
196. **Lui, Aurelio** L'isterismo infantile. Riv. Sper. di Freniat, 1898. Vol. 24, pp. 745-771.  
Résumé of recent studies on hysteria in children.
197. **Lukens, Herman T.** The school fatigue question in Germany. Ed. Review, March, 1898. Vol. 15, pp. 246-254.  
An excellent statement of recent investigations in Germany and especially of the labors of Kraepelin and Griesbach.
198. ——— The method of suggestion in the cure of faults. North Western Monthly, May, 1898. pp. 592-595.
199. ——— Notes abroad. Ped. Sem., Oct., 1898. Vol. 6, pp. 114-125.
200. **Mackenzie, John Noland** The physiological and pathological relations between the nose and the sexual apparatus of man. Bull. of the Johns Hopkins Hospital, Jan., 1898. Vol. 9, pp. 10-17.
201. **McKenzie, R. Tait** Influence of school life on curvature of the spine. Proc. N. E. A., 1898. pp. 939-948.
202. **McLeish, Mrs. Andrew** Observations in the development of a child in the first year. Trans. Ill. Soc. for Child Study, Oct., 1898. Vol. 3, pp. 109-124.  
A rather careful bit of individual child study made by an observing mother.
203. **MacLennan, S. F.** Method in child study, with special reference to the psychological point of view. Trans. Ill. Soc. for Child Study, April, 1898. Vol. 3, pp. 29-45.
204. **McMurry, Lida Brown** Relation between parents and teachers. School and Home Education, Sept., 1898. Vol. 18, pp. 17-18.
205. **Mall, Franklin P.** Development of the human intestine and its position in the adult. Bull. of the Johns Hopkins Hospital, Sept., Oct., 1898. Vol. 9, pp. 197-208.  
First attempt to trace the position and growth of the intestine from the embryo to the adult.
206. **Mansfield, Edith** Conflict of authority. Child Study Monthly, March, 1898. Vol. 3, pp. 529-539.  
A good statistical study of school discipline from the child's standpoint.
207. **Marina, Giuseppe** Ricerche antropologiche ed etnografiche sui ragazzi. Bocca, Torino, 1896. pp. 86.  
Anthropometric studies of Italian boys. Has a good bibliography.
208. ——— Studi antropologici sugli adulti. Bocca, Torino, 1897. pp. 38.  
Companion Vol. to preceding.
209. **Marshall, Henry R.** Instinct and reason. The Macmillan Co., N. Y., 1898. pp. 574.



210. **Mead, George H.** The child and his environment. Trans. Ill. Soc. for Child Study, April, 1898. Vol. 3, pp. 1-11.
211. **Merrill, Jennie B.** Children's gardens. North Western Monthly, Oct., 1898. Vol. 9, pp. 89-90. Also, Proc. N. E. A., 1898. pp. 598-602.
212. **Milliken, O. J.** Chicago vacation schools. Am. Jour. of Sociology, Nov., 1898. Vol. 4, pp. 289-308.
213. **Mills, Wesley** The nature and development of animal intelligence. The Macmillan Co., N. Y., 1898. pp. 307.  
A valuable addition to the literature of the subject. Well indexed.
214. **Moll, A.** Das nervöse Weib. F. Fontane et Cie., Berlin. pp. 226.
215. **Möller, P.** Ueber Intelligenzprüfungen. Ein Beitrag zur Diagnostik des Schwachsinn. Berlin, 1897. pp. 32.
216. **Monroe, Will S.** Vocational interests of children. Education, Jan., 1898. Vol. 18, pp. 259-264.  
A statistical study of the ambitions of 1,755 elementary school children.
217. — — Über die Behandlung der Verbrecher. Die Kinderfehler, Jan., 1898. Vol. 3, pp. 19-22.  
Describes the training of adolescent delinquents in America.
218. — — Chorea among public school children. American Physical Education Review, March, 1898. Vol. 3, pp. 19-24.  
Translated into German by Johann Trüper and published in Die Kinderfehler, Sept., 1898. Vol. 3, pp. 155-160.
219. — — Das Studium der Kindesseele in Amerika. Deutsche Zeit. für Ausländisches Unterrichtswesen, April, 1898. Vol. 3, pp. 193-203.  
Historical and descriptive account of the child study movement in America.
220. — — Development of the social consciousness of children. North Western Monthly, Sept., 1898. Vol. 9, pp. 31-36. Also Proc. N. E. A., 1898. pp. 921-928.  
Traces briefly the genesis of the social sense in animals, primitive man, and the child.
221. — — Child study outlines. Second series: 1. Children's spontaneous drawings. 2. The money sense of children. 3. Memory types of children. 4. Perception of children. 5. Fatigue in school children. 6. Growth of children. 7. Psychology of adolescence. 8. Imitation in childhood. 9. Suggestibility of children. Wright & Potter Printing Co., Boston, 1898.  
A series of nine outlines suggesting specific studies, hints for the collation of the material collected, and bibliographic references to the literature of the subject.  
— — See, also, No. 183.
222. **Morton, Aima B.** Child study and education. Public School Journal, Feb., 1898. Vol. 17, pp. 289-293.

223. **Mott, T. A.** Contagious diseases in school. Proc. N. E. A., 1898. pp. 381-386.
- Muffang, H.** See **Ammon O.**
224. **Munro, Mary F.** Three years in the life of a child. Ed. Review, Nov., 1898. Vol. 16, pp. 367-377.
225. **Mutke, Robert** Die Behandlung stammelnder und stotternder Schüler. Breslau, 1898. pp. 30.  
Relates largely to the pedagogic and didactic treatment of stammerers who relapse. Author is director of the curative course of the Breslau Institution for stammering children.
226. **Neuman, B. P.** Take care of the boys. Fortnightly Rev., Sept., 1898. Vol. 70, pp. 410-421. Also Living Age, Nov. 19, 1898. Vol. 219, pp. 503-513.
227. **Noikov, D.** Das Aktivitätsprincip in der Pädagogik J. J. Rousseau's. Schmidt, Leipzig, 1898. pp. 160.
228. **Noss, Theo. B.** Child study record. The Author, South-western State Normal School, California, Pa.  
A convenient individual record book prepared for the author's classes in pedagogy.
229. **Oltuszevski, W.** Die geistige und sprachliche Entwicklung des Kindes. H. Cornfeld, Berlin, 1897. pp. 43.  
Gives monthly details of linguistic development of a Polish child. Valuable for comparison with Preyer, whose work the author has carefully collated with his own.
230. **Oppenheim, Nathan** The development of the child. Macmillan Co., N. Y., 1898. pp. 296.  
Contents: Facts in the comparative development of the child; importance of heredity and environment; the primary school; religion; the child as a witness in suits of law; the child-criminal; the genius and the defective; the child and institutional life; the profession of maternity.
231. **Osborn, F. W.** Wordsworth's poems of children and childhood. Education, Oct., 1898. Vol. 18, pp. 93-99.  
A brief study of the child in literature.
232. **O'Shea, M. V.** "Spare the rod and spoil the child." The Outlook, Jan. 8, 1898. Vol. 58, pp. 128-130.  
Results of child study applied to corporal punishment.
233. ——— The purpose, scope and method of child study. Jour. of Pedagogy, Jan., 1898. Vol. 11, pp. 9-23.  
A forceful statement of the practical utility of child study.
234. ——— Some adolescent reminiscences. Jour. of Pedagogy, Oct., 1898. Vol. 11, pp. 299-317.  
A study based on replies to a questionnaire from forty college students on their recollections as to growth, intellectual and emotional phenomena, dress, etc., during early adolescence.
235. **Oswald, Felix L.** The secret of atavism. Pop. Sci. Mo., June, 1898. Vol. 53, pp. 192-196.
236. **Partridge, George E.** Reverie. Ped. Sem., April, 1898. Vol. 5, pp. 445-474.  
——— See, also, No. 89.

237. **Pearson, Karl** On a scale of intelligence in children. *Jour. of Ed.*, London, Sep., 1898. N. S. Vol. 20, pp. 509-510.
238. **Peck, E. A.** Defective vision. *Child Study Monthly*, June, 1898. Vol. 4, pp. 100-104.
239. **Pelopi**, — De la precocité et des perversions de l'instinct sexuel chez les enfants. *Bordeau*, 1898.
240. **Petit, Edouard** Autour de l'école du soir : I. Chez les adolescents ; II. Chez les ouvriers ; III. Chez les soldats. *Revue Pédagogique*, April, 1898. Vol. 32, pp. 303-322.
241. — — Ames d'écoliers. *Rev. Pédagogique*, Nov., 1898. Vol. 33, pp. 377-387.
242. **Phelps, G. M.** Care of children's teeth. *Child Study Monthly*, Oct., 1898. Vol. 4, pp. 225-233.
243. **Pierce, A. H.** The illusion of the Kindergarten pattern. *Psychological Review*, May, 1898. Vol. 5, pp. 233-253.
244. **Pierce, John M.** Psychological aspects of physical education. *Am. Phys. Ed. Review*, March, 1898. Vol. 3, pp. 30-37.
245. **Phillips, Daniel E.** Some remarks on number and its application. *Ped. Sem.*, April, 1898. Vol. 5, pp. 590-598.
246. **Plummer, Edward M.** The Olympic games in ancient times. *Am. Phys. Ed. Review*, March and June, 1898. Vol. 3, pp. 1-18; 93-106.
247. — — Toys and games for children among the ancient Hellenes. *Am. Phys. Ed. Review*, Sept., 1898. Vol. 3, pp. 157-169.
248. **Pollock, Susan P.** Ideal play in the Kindergarten. *Proc. N. E. A.*, 1898. pp. 604-608.
249. **Porter, Isaac, Jr.** Photographing children at home. *Ladies' Home Journal*, Dec., 1898. Vol. 16, No. 1, p. 35.
250. **Powell, W. B.** Medical inspection of schools. *Proc. N. E. A.*, 1898. pp. 454-462.
251. **Quantz, J. O.** Dendro-psychoses. *Am. Jour. of Psy.*, July, 1898. Vol. 9, pp. 449-506.
252. **Quincy, Josiah** Playgrounds, baths, and gymnasia. *Am. Phys. Ed. Review*, Dec., 1898. Vol. 3, pp. 234-241.
253. **Ragozin, Zenaide A.** Tales of the heroic age; Siegfried & Boewulf. G. P. Putnam's Sons, N. Y., 1898. pp. 332.  
Addressed to childhood under the conviction that myth is essential. Timely and valuable for every teacher of literature.
254. **Regnault, F. et Raoul** Comment on marche. *Lavanzelle*, Paris, 1898. pp. 188.
255. **Report of the Chicago Vacation School Committee of Women's Clubs**, Chicago, 1898. pp. 44.

256. **Report of the Departmental Committee on Defective and Epileptic Children.** Vol. 1. The Report, pp. 42; Vol. 2. Minutes of Evidence, Appendices, etc., pp. 283. Eyre & Spottiswood, London, 1898.  
 Recommends that teachers be trained to make special observations upon these children.
257. **Robinson, Harriet H.** Loom and spindle, or life among the early mill girls. T. Y. Crowell & Co., N. Y., 1898. pp. 216.  
 Valuable for its details and economic history.
258. **Rohleder, H.** Die Masturbation. Fischer's Med., Buchhandlg, Berlin, 1898. pp. 319.  
 A monograph for physicians and teachers. Elaborate and systematic.
259. **Rosenfeld, Leonhard** Arbeitsschulen für Verkrüppelte. Zeit. für Schulgesundheitspflege, Jan., 1898. Vol. 11, pp. 4-18.  
 An account of the European movement to give special training to crippled and deformed children.
260. **Roubinovitch, Dr.** L'alcool, l'enfance et l'école. Rev. Pédagogique, Jan., 1898. Vol. 32, pp. 35-41.
261. **Rowe, S. H.** Fear in the discipline of the child. The Outlook, Sept. 24, 1898. Vol. 60, pp. 232-234.
262. **Royce, Josiah** The new psychology and the consulting psychologist. Proc. N. E. A., 1898. pp. 554-570.
263. ——— The psychology of invention: Psychological Review, March, 1898. Vol. 5, pp. 113-144.
264. **Rude, A.** Jugendlektüre und Schülerbibliotheken. Rein's Ency. Handb. d. Pädagogik. Vol. 3, pp. 934-945.
265. **Sachse, L.** Das Kind und die Zahl. Eine psychologisch-pädagogische Skizze. Zeits. f. Philosophie u. Pädagogik. Langensalza, 1898. Band 5, pp. 356-360.
266. **Salge, B.** Hysterie bei Kindern. Berlin, 1898.
267. **Sanborn, Alvan F.** About boys and boys' clubs. N. A. Review, Aug., 1898. Vol. 167, pp. 254-256.
268. **Sanders, W. H.** Attitude of Rensselaer pupils toward school. North Western Monthly, Jan., 1898. Vol. 8, pp. 382-385.
269. **Schiller, Hermann** Der Stundenplan. Ein Kapitel aus der pädagogischen psychologie und physiologie. Samml. von Abh. Geb. a. d. Päd. Psy. u. Physiol. Reuther & Reichard, 1897. pp. 65.
270. ——— Studien und Versuche ueber die Erlernung der Orthographie. Samml. v. Abh. a. d. Geb. d. Päd. Psy. u. Physiol. Band 2, Heft 4, 1898. pp. 63.  
 An excellent experimental study on spelling made in the elementary classes of the Gymnasium at Giessen.
271. **Schinz, Albert** La moralité de l'enfant. Rev. Philos., March, 1898. Vol. 45, pp. 259-295. Also, translation, by Ch. Ufer, Die Sittlichkeit des Kindes. Beyer u. Söhne, Langensalza, 1898. pp. 42.

272. **Schwalbe, B.** *Schulhygienische Fragen und Mittheilungen*, H. Heyfelder, Berlin, 1898. pp. 37.  
Presents many measurements of height, weight, etc.
273. **Scott, Colin A.** Children's fears as material for expression and a basis of education in art. *Trans. Ill. Soc. for Child Study*, April, 1898. Vol. 3, pp. 12-17.
274. **Seeley, Levi** The daily programme in schools. *Child Study Monthly*, March, 1898. Vol. 3, pp. 544-549.  
Summarizes briefly Friedrich's study on fatigue and Schuyten's study on voluntary attention.
275. **Seerley, Homer H.** The dangers of the adolescent period. Educational Foundations. E. L. Kellogg & Co., N. Y., 1898.
276. **Sheffield, Herman B.** A contribution to the study of hysteria in childhood as it occurs in the United States of America. *N. Y. Med. Jour.*, Sept. 17-24, 1898. Vol. 68, pp. 412-416; 433-436.
277. **Sheldon, Henry D.** The institutional activities of American children. *Am. Jour. of Psy.*, July, 1898. Vol. 9, pp. 425-448.
278. **Shinn, Millicent W.** Comparative importance of the senses in infancy. *North Western Monthly*, April, 1898. Vol. 8, pp. 544-547.
279. **Small, M. H.** Methods of manifesting the instinct for certainty. *Ped. Sem.*, Jan., 1898. Vol. 5, pp. 313-380.
280. ——— An experiment borrowed from the schoolroom. *North Western Monthly*, Nov., 1898. Vol. 9, pp. 134-135.
281. **Smith, A. T.** Psychological tendencies. The study of imitation. *Rep. U. S. Comm. of Ed.*, 1896-97. Vol. 1, pp. 671-676.
282. **Smith, Nora A.** The children of the future. Houghton, Mifflin & Co., Boston, 1898. pp. 165.  
Contains chapters on the study of children; training for parenthood; sand and the children; kindergarten training.
283. ——— The kindergarten made possible in every home, village, or small neighborhood. *Ladies' Home Journal*, Nov., 1898. Vol. 15, No. 12, p. 20; Dec., 1898, Vol. 16, No. 1, p. 34; Jan., 1899, No. 2, p. 16; Feb., 1899, No. 3, p. 22.
284. **Soldevilla, Carrera, M.** *La infancia y la criminalidad*. Lérida, 1897. pp. 240.
285. **Solotaroff, H.** The origin of the family. *Am. Anthropologist*, Aug., 1898. Vol. 11, pp. 229-242.
286. **Stableton, J. K.** The study of boys entering the adolescent period. III-IV. The relation of the sexes. V. An untruthful character. VI. The passionate boy. VII. Arrested development. *North Western Monthly*, Jan., March, April, May, Dec., 1898. Vol. 8, pp. 385-386; 484-487; 539-541; 589-592. Vol. 9, pp. 138-140; 179-180.
287. **Stanley, Hiram M.** On the early sense of self. *Science*, 1898. N. S. Vol. 8, pp. 22-23. (See No. 141.)

288. **Stern, Herman I.** The gods of our fathers. Harper & Brothers, N. Y., 1898. pp. 269.  
A work on Saxon mythology that every student and teacher should read.
289. **Stryker, Mabel F.** Children's joys and sorrows. Child Study Monthly, Oct., 1898. Vol. 4, pp. 217-225.  
A statistical study of the happiest and saddest days ever experienced by 1,800 school children.
290. **Stuart, Ruth McEnery Sonny.** A Christmas guest. The Century Co., N. Y., 1898. pp. 135.  
Should be read by every teacher who has a tendency to magnify his office.
291. **Sudduth, W. K.** Nervous and backward children. Child Study Monthly, March, 1898. Vol. 3, pp. 540-543.  
This series of articles continued in the issues for April, May, June and Sept., 1898.
292. **Sutherland, Alexander** The origin and growth of the moral instinct. Longmans, Green & Co., London, 1898. 2 Vols., pp. 461; 336.
293. **Swift, Edgar James** Heredity and environment. A study in adolescence. North Western Monthly, Sept., 1898. Vol. 9, pp. 36-41. Am. Phys. Ed. Rev., Sept., 1898. Vol. 3, pp. 170-178. Proc. N. E. A., 1898. pp. 910-916.  
A study of juvenile delinquency.
294. **Szentesy, Béla** Die geistige Ueberanstrengung des Kindes. I. Theil: Von der Wiege bis zur Mittelschule. II. Theil: Die Psycho.-Physiologie des Musicirens. Pester Buchdruckerei Aktien-Gesellschaft, Budapest, 1898. pp. 123.  
Part 1. A general characterization of childhood. Part 2. Describes the author's theory of playing the piano.
295. **Talbot, Eugene S.** Degeneracy. Its causes, signs and results. Contemp. Sci. Ser. Charles Scribner's Sons, N. Y., 1898. pp. 372.
296. — — A study of the stigmata of degeneracy among the American criminal youth. Jour. Am. Med. Ass'n, 1898. Vol. 30, pp. 849-856.
297. — — Defects of development in childhood. Trans. Ill. Soc. for Child Study, Oct. 1898. Vol. 3. pp. 75-90.
298. **Taylor, A. R.** The study of the child. D. Appleton & Co., N. Y., 1898. pp. 215.  
A brief treatise on the psychology of the child with suggestions for teachers, students, and parents.
299. **Taylor, J. L.** The amount of work the growing brain should undertake. Bull. Am. Acad. Med., 1898. Vol. 3, pp. 469-482.
300. **Taylor, John Madison** The nervous mother. Reprint from University Med. Magazine (Phila.), July, 1895. pp. 8.
301. — — Puberty in girls and certain of its disturbances. A practical lesson. Reprint from Pediatrics, July 15, 1896. pp. 6.

302. ——— Children of feeble resistance: their care and management. Reprint from *Int. Med. Mag.*, Aug., 1896. pp. 26.
303. **Taylor, Joseph S.** Some practical aspects of interest. *Ped. Sem.*, April, 1898. Vol. 5, pp. 497-511.
304. **Thompson, John G.** Child study in the training of teachers. *North Western Monthly*, Sept., 1898. Vol. 9, pp. 41-43. Also *Proc. N. E. A.*, 1898. pp. 916-921.
305. **Titchener, E. B.** A primer of psychology. The Macmillan Co., N. Y., 1898. pp. 314.
306. ——— Ebbinghaus's method for the study of fatigue in school hours. *Journal of Education*, June 30, 1898. Vol. 48, pp. 7-8.
307. **Trüper, Johann** Minor mental abnormalities in childhood. *Child Study Monthly*, May, June, Sept., and Dec., 1898. Vol. 4, pp. 2-15; 88-97; 130-138; 342-346.  
This is a translation by C. C. Van Liew from the German of Trüper's excellent monograph on *Psychopathische Minderwertigkeiten im Kindesalter*.
308. ——— *Psychopathisches im Kindesleben*. Rein's Ency. *Handb. d. Pädagogik*. Vol. 5, pp. 588-597.
309. **Truslow, Walter** Exercise during adolescence. *Am. Phys. Ed. Review*, June, 1898. Vol. 3, pp. 111-121.
310. **Tucker, Emmeline F.** Nebraska society for child study. *North Western Monthly*, Jan., 1898. Vol. 8, pp. 387-389.
311. ——— The child and his school reader. *North Western Monthly*, June, 1898. Vol. 8, pp. 654-655.
312. **Tümpel, R.** Ueber die Versuche geistige Ermüdung durch mechanische Messungen zu untersuchen. *Zeits. f. Philos. u. Pädagogik*, 1898. Vol. 5, pp. 31-38; 108-114; 195-198.
313. **Ufer, Chr.** Zur Beobachtung der Kinder. *Die Kinderfehler*, Jan., 1898. Vol. 3, pp. 1-8.  
Presents the claims of child study to parents.
314. ——— Über Kinderpsychologie. *Die Kinderfehler*, May, 1898. Vol. 3, pp. 65-74.
- Vaschide, N.** See **Binet and Vaschide**. (No. 36.)
315. **Vitali, V.** Studi antropologici in servizio della pedagogia. Vol. 1, I Romagnoli. Forli, 1896. pp. 116. Vol. 2, Le Romagnole. Turin, 1898. pp. 130.  
Anthropometric and psychological studies of Italian boys and girls.
316. **Vivier, H.** Sur l'infantilisme. Jouve, Paris, 1898. pp. 58.
317. **Wagner, Ludwig** Unterricht und Ermüdung. Ermüdungsmessungen an Schülern des neuen Gymnasiums in Darmstadt. *Samml. von Abh. a. d. Geb. d. Paed. Psy. u. Physiol.* Vol. 1, Heft 4. Reuter u. Reichard, Berlin, 1898. pp. 134.  
A study of fatigue in the gymnasium at Darmstadt by means of the compass æsthesiometer.

318. **Weir, James** The dawn of reason, or mental traits in the lower animals. Macmillan Co., N. Y., 1898. pp. 234.  
Takes too high a view of animal mentality.
319. **Wessely, Rudolf** Der Geschmack der Quintaner und Quartaner. Zeits. f. d. deuts. Unterricht, 1898. Vol. 12, pp. 449-460.
320. **Westermarck, Edward** The essence of revenge. Mind, July, 1898. N. S. Vol. 7, pp. 289-310.
321. **What** can child study contribute to the science of education? North Western Monthly, April, 1898. Vol. 8, pp. 535-539.
322. **Wilke, G.** Die Hauptberührungs Unterscheidungspunkte der Erziehungsgedanken John Locke's und J. J. Rousseau's. Erlangen, 1898. pp. 65.
323. **Wille, W.** Die Psychosen des Pubertätsalters. F. Deuticke, Wien, 1898. pp. 218.
324. **Wilson, Louis N.** Bibliography of child study. Pedagogical Seminary, April, 1898. Vol. 5, pp. 541-589. The same reprinted in pamphlet form, Clark University Press, Worcester, 1898. pp. 49  
A list of 535 books and pamphlets on child study; 13 journals; 16 reports, serial studies, and translations of societies; and 81 works of standard reference on allied topics. With a subject index.
325. **Winship, Albert E.** Fitting the curriculum to the different ages of childhood and youth. Journal of Education, Nov. 17, 1898. Vol. 48, pp. 320-321.  
A discussion of Pres. G. Stanley Hall's address before the New England Association of School Superintendents.
326. **Wissler, Clark** The interests of children in the reading work of the elementary schools. Ped. Sem., April, 1898. Vol. 5, pp. 523-540.
327. — — Pupils' interest as influenced by the teacher. Child Study Monthly, Sept., 1898. Vol. 4, pp. 139-146.  
A statistical study of the preferences of pupils and teachers for certain school subjects.
328. **Wolfe, H. K.** Moral training of children. North Western Monthly, Feb., 1898. Vol. 8, pp. 431-435.
329. **Woods, Alice** Child study. Jour. of Ed., London, July, 1898. N. S. Vol. 20, pp. 396-397.
330. **Yoder, A. H.** Pubescence. North Western Monthly, May, 1898. Vol. 8, pp. 597-600.
331. **Ziehen, Th.** Die Ideenassoziation des Kindes. Erste Abhandlung. Abh. a. d. Geb. d. Paed. Psy. u. Physiol. Band 1, Heft 6. Reuter & Reichard, Berlin, 1898. pp. 66.  
A study of the association of ideas of boys from 8 to 14 years.
332. — — Nervensystem. Rein's Ency. Handb. d. Pädagogik. Vol. 5, pp. 89-92.
333. **Zueblin, Charles** Municipal playgrounds in Chicago. Am. Jour. of Sociology, Sept., 1898. Vol. 4, pp. 145-158.



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## BOOK REVIEWS.

*Revue Internationale de Pédagogie Comparative.* Nantes (France):  
AUGUSTE MAILLOUX, Rédacteur en chief. Mars, 1899, 1e année,  
No. 1. pp. 68. 10 francs a year.

This new review is published in the interests of defective children—the feeble-minded, deaf, blind, etc. It is pedagogic in character and aims to correlate the interest in abnormal children with the child study movement. Dr. Bourneville, the well-known alienist of the Bicetre, and Dr. Couëtoux, of Nantes, are associate editors of the new review. About sixty collaborateurs are announced for the current year, including Gabriel Compayré, Hamon du Fougeray, Edouard Petit, Edouard Drouot, and Maurice Kuhn, of France, Dr. A. E. Osborne, Dr. George W. Fitz, Dr. A. C. Rogers, Miss Harriet A. Marsh, Dr. Walter E. Fernald, Dr. Martin W. Barr, and Mr. Will S. Monroe, of the United States, with others interested in defectives in England, Germany, Belgium, Spain, Italy, and Denmark.

The first article in the opening number of this new review is a study of the feeble minded children in the public schools of California, by the writer. The investigation included the study of nearly 11,000 public school children, and the writer concludes that in every school of fifty pupils there is at least one child that can be more economically trained in special institutions for defectives than in the public schools. Kept in graded schools, under teachers who have little knowledge of their condition, these children leave the public schools and take prominent rank among the paupers, social failures, and criminals. In the second article, Dr. Hamon du Fougeray reviews the legislative enactments that have had special reference to the improvement of abnormal children in France. It is a succinct, historical and descriptive article. The third article is by Émile Grégoire, principal of the school for the deaf in Belgium. It is a historical survey of the teaching of the deaf and the blind in Belgium. Miss Harriet A. Marsh, of Detroit, tells in an attractive manner what is being done by the mothers of Michigan to further the child study movement. Several short articles and a number of book reviews complete the table of contents of the first number. Students of childhood, and more particularly those interested in the study of defective children, will be glad to learn of the existence of this new French monthly.

WILL S. MONROE.

*An Introduction to the Study of Literature.* Edited by EDWIN HERBERT LEWIS, PH. D. The Macmillan Company, New York, 1899, pp. 410.

This Introduction of Dr. Lewis's is a tentative contribution towards the ripe problem of literature teaching in the secondary school.

It is hardly an exaggeration to say that the most of such teaching fails of hitting any mark, and is even worse than useless—positively deleterious—in many instances. The testimony of many careful observers forms a consensus that imagination and the æsthetic and moral sentiments are but little touched and vitalized by the current teaching of the subject. A hint of the reason for this may be gathered from the published statement, in the catalogue of a good secondary school,

that the "purpose of the course" in English Literature is "to acquaint the pupil with the best in English Literature and why it is best." The paralyzing falseness of this motive in literature teaching needs no comment.

Dr. Lewis's book starts with the opposite motive to stimulate and educate the emotions and indirectly the will, for it is evident that the wholesome direction of the affective life is a well disciplined, second only to sound motor training in the first years of life. The significance of Dr. Lewis's book is that it starts from the psychological point of view, from the point of view of the psychology of the period for which the teaching is intended—the psychology of adolescence. As our knowledge of this psychology is sufficiently limited, it is to be presumed that the work of Dr. Lewis is by no means final.

The selections are arranged not in chronological order, but under titles specifying forms of conduct. These are The Nobility of Animals, The Heroism of War, The Heroism of Peace, The Athlete, The Adventurer, The Hearth, The Morning Landscape, The Gentleman, Wit and Humor, and The Far Goal. These all are near the adolescent mind. Each of these chapters is prefaced by a brief introductory essay. The selections are both prose and verse, and cover the field of English Literature from Spenser to Kipling. It would be extravagant to say that better selections could not have been made, but they are admirable. A chronological table of contents is inserted as appendix. It may be questioned whether the critical notes and queries interspersed through the book would not have better been omitted. If they are necessary for the teacher, they might be issued separately as a key.

The book ought to be a boon to that increasingly large class of teachers who feel the futility of the old methods, but have not found any firm ground for the new. W. S. SMALL.

*L'Enfant et l'Adolescent dans la Société Moderne*, par LOUIS DEFERT.  
Preface de M. TH. RANSSEL. Paris, Montgredien et Cie, 1897.  
pp. 217.

The pressing problem of the depopulation of France is responsible for this book. The author does not attempt to solve the problem—"to enumerate and define the causes of this evil"—but merely to exploit one of the causes. This cause is the condition of physical and moral inferiority in which many children are placed. Such unfortunate children are of three classes: those who are left to themselves through lack of oversight on the part of careless parents; those who are abandoned, the parents having disappeared; those who suffer ill-treatment at the hands of parents or concubines. Such children are almost sure to fall into idleness and crime. Maturity finds them quite unfit for family life. They become parasites—idlers—not obeying the primal law of labor, and their increase is a menace to society.

In order that the problem of alleviating the condition of these classes of children may be met more intelligently, M. Defert sets himself the task of making known succinctly what the status is of the child and the adolescent in modern society.

He passes in review and cites briefly the purviews which govern childhood and adolescence. The knowledge of these laws, thus readily accessible, will be of great value to all who are engaged in philanthropic work which touches childhood. W. S. SMALL.

*Une enquête pédagogique dans les écoles primaires de Lyon*. Par M. CHABOT. *Bulletin de l'Instruction primaire du Rhône*. January, 1899. pp. 51-55.

That there is an awakened interest in the child study movement in

France is clearly apparent from the prominence given the subject in French pedagogical reviews. The study made in the schools of Lyons by M. Chabot, of the department of education in the University of Lyons, was undertaken at the suggestion of M. Compayré. The pupils tested were asked to state the school study they liked the best, with the following results: Morals, 210; History, 187; Arithmetic, 155; Geography, 145; French, 121. The preference for morals, M. Chabot thinks due to the interest developed through the use of stories, poems, and fine bits of prose. One young French Miss expresses her preference for morals in the following words: "I like the study of morals best because it teaches me how to become the kind of a girl that will bring happiness to her family, become an excellent mother that will teach her children integrity, economy, industry, and many other virtues. Without the good lessons in morals which our teacher gives, France, so thriving, would lapse into anarchy." The express dislike for French M. Chabot thinks largely due to the difficulties of the study. In spite of the numerous efforts to put grammatical rules in the background in the study of the language and literature of the mother tongue, the fact, nevertheless, remains that the study of French is less interesting to the elementary school children than all the other studies, and largely because it is so difficult. Sex differences are less pronounced than one might have expected; and one notes less spontaneity in the answers of these French children than would be found among American children of corresponding ages. The study M. Chabot considers suggestive, in that it hints at lines of interest which must be reckoned within the adjustment of school courses.

WILL S. MONROE.

*Women and Economics*, by CHARLOTTE PERKINS STETSON. Boston, 1898. pp. 340.

It is interesting to note the extreme difference of standpoint between this book and the one of a similar title by Mme. Lamperrière. According to our author women have no true economic relation to society, since, while they may drudge in the household or enjoy the luxury of the rich, they are not paid in proportion to the amount or value of their services. In spite of some exceptions, women, as a whole, are dependent upon men for support; and in requital for this set themselves simply to please men. It is not the most worthy, but the most pleasing women who make the most satisfactory alliances and who gain the most constant and devoted support.

As a result of this women have become over-sexed; *i. e.*, lost the power of self support, developed extreme characteristics different from those of men because they are pleasing to men, and invite over-indulgence which weakens the individual and the race.

While the writer lacks in the accuracy of various scientific details, the arguments are supported by a broad range of observation, and every chapter rings with an almost passionate enthusiasm for the central ideas. Naturally counter arguments, *e. g.*, the value of woman as a conservative element, and the advantage of half the race being relieved from economic responsibility are not duly emphasized.

J. P. HYLAN.

*Talks to Teachers on Psychology: and to Students on Some of Life's Ideals*, by WILLIAM JAMES. Henry Holt & Co., New York, 1899. pp. 301.

These fifteen discourses offer little that is new to those who are familiar with the author's psychology, some parts of which are closely followed and simplified. This is especially the case with the chapters on the stream of consciousness, habit, interest, attention, memory,

apperception and will. The three talks to students, which make up the last third of the work, are fresh and interesting.

*Psychology and Life*, by HUGO MÜNSTERBERG. Houghton, Mifflin & Co., Boston and New York, 1899. pp. 286.

Like his colleague, Professor James, Professor Münsterberg here presents in the form of popular lectures, dedicated to Professor Rickert of Freiburg, his views upon the six topics of psychology and life; psychology and physiology; psychology and education; psychology and art; psychology and history; psychology and mysticism. Some will perhaps first turn to his discussion of the value of psychology for the teacher and for pedagogy, and will be pleased to know that on the whole he now estimates the study of the child far more highly than his earlier utterances on the subject had given reason to believe; and after reading his estimate of the very slight value of psychology for education, will realize that this is quite correct in the epistemological way in which he conceives psychology. This, however, leaves totally unaffected more anthropological, empirical, practical, and, as we think, larger conceptions of the science.

*From Comte to Benjamin Kidd*, by ROBERT MACKINTOSH. The Macmillan Co., New York, 1899. pp. 312.

This book originated in two years consecutive work with the senior class in sociology of Lancashire College. The author finds Comte, on whom he has an excellent discussion, arbitrary, and thinks that idealism will give a better doctrine of evolution than has yet been taught; that differentiation has been far better than progress in the past; that the latter is due to reason, and holds Christianity and morality the chief safeguards of modern civilization.

*From the Child's Standpoint*, by FLORENCE H. WINTERBURN. Baker & Taylor Co., New York, 1899. pp. 278.

The author of *Nursery Ethics* here brings together thirty-nine brief papers from popular journals, which present interesting phases of child life written from the standpoint of sympathy rather than of science, which she disparages. There is no indication that we have observed, save a single reference to Preyer and one or two others, that the author knows anything about modern child study.

*Der Stoffwechsel des Kindes*, von WILHELM CAMERER. Tübingen, 1896. pp. 160.

The author treats in the first chapter the growth of children during the first year. In the second, the metabolism of the first fourteen days, then to the twenty-second week, and thence to the end of the first and the second year. In the final chapter, the mechanical theory of metabolism is discussed; and the influence of seasons, time of day, individuality and chance. It is a painstaking, scientific work, with many tables.

*Tom Tit Tot*, by EDWARD CLODD. London, 1898. pp. 249.

This is an essay on savage philosophy in folk-tale and the title is that of the first story. The other topics are on the diffusion of stories, the gullible devils, superstitions about iron, woman as spinster and farmer, barbaric ideas about the power of names, magic through hair, nails, saliva, portraits, shadows, names, etc. The subjects best treated are taboo and words of power, including mantraps, passwords, spells, charms, and the identity of name and soul.

*The Story of Ab; A Tale of the Time of the Cave Man*, by STANLEY WATERLOO. Chicago and New York, 1899. pp. 351.

These 30 chapters, with 11 full page illustrations, are romantic de-

scriptions of the life of primitive cave man. The author has been aided by experts in prehistoric anthropology, and from these he differs only in ignoring the chasm which is supposed to divide paleolithic from neolithic man. There are fights with cave bear, hyena, mammoth, saber-toothed rhinoceros and wolves; stories of courtship, marriage, childhood, prodigies of swimming and tree climbing, murder and other forms of death, burial, romance of fire, etc. The primitive man described has some use of language, uses the bow and arrow, stone axe and knives, and is far more humanized than the missing link which Gabriel Max has painted for us.

*Legends of the Saints*, by G. R. WOODWARD. London, 1898. pp. 104.

This is an attractive little work which attempts to give the stories of an even dozen saints in poetic form. They are Saints Christopher, Joyce, Austin, Ursula, Nicholas, Lawrence, Martin, the two Georges, Eric, John, and Dorothy. The rest of the book is made up of religious poems mostly translated from the Latin and German.

*A Country Schoolmaster; James Shaw, Tynron, Dumfriesshire.* Edited by ROBERT WALLACE. Oliver and Boyd, Edinburgh, 1899. pp. 392.

James Shaw was a Scotch teacher with a large mind and heart, who played his life drama on a small and dimly lighted stage, and lately died at the age of over seventy. He was a man of charming personality, an excellent conversationalist, who dabbled a good deal in science and wrote considerable pretty good poetry, read and commented in racy essays on many current topics, wrote charming letters, knew great men, and led in many ways an ideal life. The book is full of interest and should be in pedagogical libraries.

*Creative Myths of Primitive America in Relation to the Religious History and Mental Development of Mankind*, by JEREMIAH CURTIN. Little, Brown and Co., Boston, 1898. pp. 530.

This fascinating work consists of twenty-two stories, many of which were collected under the auspices of Major Powell, in which American aborigines have sought to give a more or less detailed account of the world and things in it. Most describe an earlier order of existence and method of conduct on which life was patented, and this had two stages, one of harmony and one of conflict, and everything but man is the outcome of this period. He stands apart, alone. In all these stories, there is no reference to white man or to any other race than the Indian. The animal names, which designate nearly all the chief actors, add greatly to the mystery and interest of this book. Convenient notes and etymologies conclude the volume.

*The Art of Teaching*, by DAVID SALMON. Longmans, Green and Co., New York, 1898. pp. 289.

This little manual is extremely practical and comprehensive. It includes the general principles of teaching, questions, object lessons, with a section on each of the main school topics, Fröbelism and sample examination papers. The author has also written seven other text books on grammar, object lesson, composition, history, etc. If a teacher knew nothing of methods, and could have but one book, this is the best I know of its size.

*The Life of Henry Drummond*, by GEORGE ADAM SMITH. London, 1899. pp. 506.

Professor Drummond is very fortunate in his biographer who has made this work eminently one of love, and every one will rise from its perusal with an inspiring ideal of a devoted life. The three chapters



of diaries of travel, and those upon the student movement and American colleges, are of especial educational interest.

*Émile Zola*, by ÉDOUARD TOULOUSE. Paris, 1896. pp. 285.

This remarkable work is an attempt to apply the methods of historical and direct observation to an eminent man. Each sensation, his power of attention, reaction time, assimilation, ideation, association, judgment, emotiveness, will, memory in different directions, power of speech, condition of all his organs, his heredity, the physical peculiarities and measurements, his general biography and many other points, are discussed at great length, and in a very interesting and suggestive way, which suggests how far behind in completeness all preceding biographical work has been.

*The Great Affirmations of Religion*, by THOMAS R. SLICER. Houghton, Mifflin & Co., Boston and New York, 1898. pp. 273.

Mr. Slicer sub-titles his work an introduction to real religion not for beginners but for beginners again. It is made up of sixteen sermons by a Unitarian divine of New York City, which altogether constitute an admirable exposition of a creed based on the higher criticism from which it has extracted abundant practical applications.

*Have You a Strong Will?* by CHARLES G. LELAND. George Redway, London, 1899. pp. 235.

This is Hans Breitenmann, who here undertakes to tell us how to develop will power or any other attribute of mind by the easy process of self-hypnotism. He thinks all mental faculties can now be influenced in what we have before regarded in a miraculous way, and even sets forth a new "art of memory." Absolute self-control can thus be taught, and what is better yet an equable or calm state of mind under whatever provocations of grief or mortification. Best of all a kind of fascination by which others are charmed may also be measurably developed.

*Early Chapters in Science*, by MRS. W. AWDRY. J. Murray, London, 1899. pp. 348.

This is intended as a first book of botany, natural history, physiology, chemistry, etc., for young people, and is one of the best introductions to science that has appeared in recent years. It contains illustrations on nearly every page, and these appear to be well chosen and are often rudely executed to incite drawing. The first part teaches to observe and the second to question nature, and the whole is apparently suggested by Burt's popular First Year in Scientific Knowledge, although this is said by the editor to be less like pemmican for the youthful mind.

*L'Ignorance et l'Irréflexion*, par L. GÉRARD-VARET. F. Alcan, Paris, 1898. pp. 296.

This essay on objective psychology is the third we have received recently on the theme of ignorance. The author describes it as due to mental passivity and as really an invention. The relations of ignorance to experience and intelligence, and particularly its relation to the will, are dwelt upon. Its effects on thought and action are most fully discussed.

*Der Alkoholismus*, von ALFRED GROTHJAHN. Leipzig, 1898. pp. 412.

This is a timely work on the effects of alcohol upon circulation, nutrition, psychic action, the suggestion of intoxication cures, causes, extent, forms in different lands, and the method of cure, including legislation. It is a practical and concrete study of real value.

*Die Spiele der Menschen*, von KARL GROOS. Jena, 1899. pp. 538.

This work has for sometime been awaited with an interest which will not be disappointed. The playing activities of the different senses, of the motor and then the higher psychic faculties, are treated including experiments with intellect, feeling and will; and in the second part, the play activities of lower impulses are discussed, as plays of fighting, love, imitation and social functions. The theory of play is treated from the five standpoints of physiology, biology, psychology, æsthetics, sociology and pedagogy.

*Popular Education in England*, by J. GEORGE HODGINS. Toronto, 1899. pp. 77.

The author is librarian of the educational department of Ontario, and has given us an admirable digest of the school system since the legislation of 1870, including the qualifications of teachers, new departures, defects, industrial training, university extension, etc.

*Psychologisches Lesebuch zusammengestellt mit Rücksicht auf pädagogische Verwertung*, von S. HOFFMANN. E. Wunderlich, Leipzig, 1896. pp. 167.

We have here a text book in psychology composed in a unique fashion, each topic being treated by a chapter from some well-known psychologist or pedagogue. Sigismund traces development of language from the first word to the first sentence. Formal education is extracted from Waitz, interest from Kearn and Steinthal, the sequence of concepts from Mequel, and so on for twenty-one chapters.

*Special Method in Natural Science*, by CHARLES A. MCMURRY and MRS. LIDA B. MCMURRY. Bloomington, Ill., 1899. pp. 267.

This makes the fourth of Dr. and Mrs. McMurry's special methods in school subjects, the others being on literature, history, reading and geography. Much more than half the book is given up to illustrative results for primary grades. Like all the work of Dr. McMurry, this is done with care and painstaking zeal.

*Through Nature to God*, by JOHN FISKE. Houghton, Mifflin and Co., Boston, 1899. pp. 194.

This is a collection of thirty-two brief and somewhat miscellaneous papers, which are grouped under three separate heads: the mysteries of evil, the cosmic roots of love and self-sacrifice, the everlasting reality of religion.

*L'Éducation Nouvelle*, par EDMOND DEMOLINS. Paris. pp. 320.

"This is not a book, it is an act. We are trying to create in France a new type of school more appropriate to the exigencies of actual life. This school will open in an old but reconstructed chateau in October, 1899." It seems to be inspired by and to some extent modeled after the English school of Abbotsholme and Bedales. It is situated like it, in the beautiful country of Normandy, three kilometers from the nearest station, and its end "is to make men as rapidly as possible, morally, intellectually and physically." Children are not received under eight years of age or above fifteen. Work in the garden, in the field, visiting farms, factories, and predominantly scientific and modern courses of study characterize all of these schools.

*Les Français d'aujourd'hui*, par EDMOND DEMOLINS. Paris. pp. 465.

This is a very frank characterization of his native land by this brilliant author, and is dedicated to Le Play. It is devoted to the characterization of the social types in the south and center and has had a great sale. The various zones characterized are pastoral, the fruit pro-

ducing, the zone of little farms and that of great ones, and that which tends toward communism of land.

*A Study of the Kindergarten*, by FREDERIC BURK and CAROLINE FREAR BURK. San Francisco, 1899. pp. 123.

This co-operative study, dedicated to Dr. G. Stanley Hall, was carried out during the past school year by Dr. Burk with the co-operation of a number of his teachers. Some of the topics treated are: The neurological conditions of the kindergarten child; its physical culture; play, language, music; love of nature; counting and number; moral training; spontaneous choice and use of kindergarten material. Most of the articles are brief and their value is mainly suggestive. The pamphlet, however, is exceedingly appetizing and stimulating, and is recommended to the careful attention of all interested.

*The Pedagogues*, by ARTHUR STANWOOD PIER. Small, Maynard & Co., Boston, 1899. pp. 287.

This is rather a light story of the Harvard Summer School, which soon becomes a love story with a happy dénouement.

*L'Enfant*, par COMTESSE NACLA. E. Flammarion, Paris, 1899. pp. 203.

This little compend is a collection of interesting and rather lively papers on education in the cradle, æsthetic, moral, physical and sentimental education, with one chapter on physical and another on moral defects.

*Autobiography of a Child*. Wm. Blackwood & Sons, London, 1899. pp. 299.

This anonymously printed book, said to have been written by Hannah Lynch, appears to be a probable and truthful record of her own or some one's life during childhood, starting with the earliest reminiscences and proceeding toward maturity, but the author has elsewhere stated that it is a purely imaginative sketch. It is at any rate marked by a high degree of verisimilitude and is written in a sprightly and interesting style, and might be regarded as a human document or a return of some value on several child study topics.





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## EDITORIAL.

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This number closes the sixth volume of the *Pedagogical Seminary*. Its friends will be glad to know that from the first it has steadily grown in its hold upon the public, especially so since it became chiefly devoted to Child Study, of which movement it has always been the chief organ. It is now on a solid financial basis, and the quality of its subscribers is a source of peculiar satisfaction and pride. Its list is as select as could be desired, and includes the names of nearly all of the leading and progressive minds, most of all the younger ones, in all departments of educational work from the Kindergarten to the University, both in this country and in Europe.

With the next number the following list of co-operating editors will begin their duties.

T. M. BALLIET, Superintendent of Schools in Springfield, who will report from Europe, where he is spending the current year.

EARL BARNES, who will co-operate from Great Britain.

W. H. BURNHAM, who as head of the educational department of Clark University, has already frequently enriched the pages of the *Seminary*.

W. S. MONROE, of the Westfield Normal School, whose wide European acquaintance and new methods of work and bibliographical knowledge, will be available.

E. H. RUSSELL, Principal of the Worcester Normal School, pioneer in practical Child Study work, and one of the most suggestive and interesting minds the Editor has ever met.

LOUIS N. WILSON, Librarian of Clark University, whose Bibliography of Child Study is the chief and only authority, and who is an expert in library methods, will publish the *Seminary* and continue his reports on library matters and otherwise enrich its pages.

The Editor expects to resume active contributions to its pages, and hopes to cause regular issue of its numbers, and with the aid of his associates effect improvements in the review department, and in other ways to make it indispensable to every one interested in real educational advance. Several other new departures are contemplated.

The first article in this number, by Messrs. Kline and France, introduces almost a new subject, and not only gives a good summary of the literature bearing upon the larger view of it here advanced, but attempts a new contribution.

Dr. Chamberlain shows how modern anthropology regards the child as more generic than the adult somewhat as woman is more generic than man.

The Editor records a summer exploration of his own boyhood memories up to the age of fourteen.

Superintendent Johnson describes his unique play school, which has suggested so many trialette schemes of the same sort elsewhere.

Miss Vostrovsky makes a unique but significant contribution to the great subject of children's favorite reading.

Professor Hodge states his general standpoint concerning Nature Study, his courses in which at the Clark Summer Schools have been so attractive and valuable. His view is new and marks a distinct advance, and its practicality has been demonstrated in the Worcester schools.

The literature, notes, and annual index, follow.

## THE PSYCHOLOGY OF OWNERSHIP.

By LINUS W. KLINE and C. J. FRANCE.

The present study is an attempt to investigate the origin and nature of the instincts and motives that operate in the accumulation of property, and to describe more thoroughly, than heretofore attempted, those psychoses arising from the consciousness of things owned; also to indicate the role played by property as a mind-developing agent. For these purposes the sciences of biology, anthropology, social economics, child study and history furnish analogies and illustrations.

### SECTION I. BIOLOGICAL.

Property, defined biologically, is anything that the individual may acquire which sustains and prolongs life, favors survival, and gives an advantage over opposing forces.

What are the conditions and circumstances attending the acquisition of property among the forms of animal life? In unicellular life these conditions appear to be hunger, thirst, and cold. Hunger may cause a sessile form to acquire means of locomotion, desert its sessile apparatus and go in search of food. We have observed this phenomenon in the vorticella. The whole process may take place within twenty minutes. Desiccation and a fall in temperature impel some forms to put on a coat, *i. e.*, surround themselves with a thick covering to tide over such crises. Property getting, then, in this type of life, consists in food getting, exchanging a thin for a thick covering, and a sessile for a locomotor apparatus.

The conditions underlying the acquisition of property in multicellular life are extremely complicated by the presence of two biological principles:<sup>1</sup> Multiplication (and the consequent distribution of species) and Death.

Along with differentiation in function, form, size, and the multiplication of individuals both in kind and species has gone distribution partly as a causal and partly as a reacting agent, until the waters, the whole earth and the air abound with life. A complete history of distribution would involve a consideration

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<sup>1</sup>Sex may be included as a third principle influencing property-getting motives. This phase of the subject is considered under the anthropological section.



of the majority of biological problems. For our purposes it will suffice to call attention to a few of the most obvious results. *First*: distribution has subjected innumerable forms to the wide fluctuations of cosmic forces. This is notably true of the life in temperate zones. Nearly all forms of life in these zones (save domestic animals) either migrate, hibernate, or lay in a store of food at the approach of winter,—a fact of value for the present investigation. The ant, bee, rat, squirrel, pole cat, hamster, mole, not only burrow spacious underground dwellings but fill them with a store of winter food. Observations of these activities are so frequent, and the literature so accessible, that to give examples is unnecessary. Many birds also possess the hoarding activity and all are more or less able architects. The owl (*Stix Otus*) buries its surplus provisions like the dog. The shriker or butcher bird, having appeased his appetite with grasshoppers, mice, and small birds, still continues to slay and kill. His victims, he hangs or rather impales on the thorns of bushes or on twigs. A California woodpecker bores holes in trees wherein to place his booty. In autumn he may be seen pecking away at pines and oaks, and slipping acorns into the cavities thus made.<sup>1</sup>

*Second*: distribution has caused highly complicated relations and interdependencies among all forms of animals, even plants. All this has created new instincts and habits, and in some cases has modified structure and intensified, if not necessitated the accumulation of property. Says Semper: "It is clear that a certain interdependence between flesh-and-plant-eating animals must exist and find its expression in the proportional numbers of individuals of the two groups generally distributed over the face of the earth."<sup>2</sup> Along with this numerical food relation are associated facts that bear upon the present subject, viz.: that the activities and psychoses of the plant-eaters are pacific, timid, social, and associated in general with keen senses; on the other hand the flesh-eaters are cunning, stealthy, ferocious, leading selfish, isolated, and solitary lives. We never associate the terms cunning, stealth, avarice, glutton, morose and selfish with creatures like the pigeon, dove, deer, gazelle, camel and sheep. They characterize well types like the spider, owl, hawk, buzzard, fox, mink, bear, tiger, etc.

An illustration of multiplication and distribution modifying structure and necessitating the accumulation of a special kind of material is seen among different species of ants.

"Amongst the Amazon Ants (*Formica rufescens*) who not only do not debase themselves by working, but even have the

<sup>1</sup> Letourneau, Ch.: Evolution of Property.

<sup>2</sup> Semper, Karl: Animal Life, p. 51. Int. Sci. Series.

food put into their mouths by their slaves, the jaws have become elongated, narrow and powerful, and project in sharp points, very suitable for piercing an adversary's head, but unfit to lay hold of food. When one of these amazons is hungry, she taps with her antennæ upon the head of a slave, who injects food from her own mouth into that of her mistress."<sup>1</sup>

The yellow ant (*Lasius Flavus*) has domesticated the plant lice (Aphides) for the milk that they furnish. "As soon as one of these new herds is found by an ant, she returns to the nest and informs her companions. One or two ants then accompany her to the treasure, which in the future remains, night and day, under their watchful care. As the herd increases in numbers, additional herdsmen are called into service."<sup>2</sup> The constant guarding of the Aphides is due to the fact that they are eagerly sought for by ants from other colonies, and especially by the swift flying ichneumon, which uses the body of the Aphides as a depository for its eggs. It is observed that when one of these flies is seen hovering over the herd, the ants at once endeavor to chase her away whenever she alights. In addition to slaves and cattle, the products of agriculture as well as the grains of uncultured plants constitute a species of property prized by the ants of the southern portions of the north temperate zone.<sup>3</sup> I need only call attention to the Harvesting Ant of Texas. Moggridge,<sup>4</sup> one of the earlier scientific observers of the Harvesting Ants of the Old World, writes: "I then selected a nest where the coarse and hard rock lay much nearer to the surface, barring the downward course of the ants and compelling them to extend their nest in a horizontal direction. Here . . . I came upon large masses of seeds carefully stored in chambers prepared in the soil. Some of these lay in long subcylindrical galleries, and, owing to the presence in large quantities of the black shining seeds of Amaranth, looked like trains of gunpowder laid ready for blasting. . . . On carefully examining a quantity of the seeds, and minute dry fruits, he found more than twelve distinct species of plants, belonging to at least seven separate families. The granaries lay from an inch and a half to six inches below the surface and were all horizontal. They were of various sizes and shapes, the average granary being about as large as a gentleman's gold watch."

In leaving for the present the question of the acquisition of

<sup>1</sup> Allen, Grant: Flash light on Nature.

<sup>2</sup> Weir, James, Jr.: The Herds of the Yellow Ant. Pop. Sci. Monthly, Vol. LIV, No. 1, p. 76, 1898.

<sup>3</sup> McCook, Henry Christopher: The Nat. Hist. of the Agri. Ant. of Texas. Acad. of Nat. Sci. of Phil. 1879, pp. 207.

<sup>4</sup> Moggridge, J. Traherne: Harvesting Ants and Trap-Door Spiders. London, 1873.

property among social animals this speculation is made, to wit:—Those species that hoard up food stuff, or that slay creatures in excess of their needs, have *either* descended from a species whose social organization was complex; the labor of the members being divided into groups of fighters or protectors, builders and food gatherers,—the last named only surviving; or they were descended from a species which at some remote period were forced to pay tribute in the shape of food stuffs to some stronger species. As yet we are unable to justify the theory by facts from the lower animals. It finds some justification, however, in human history. The Jews appear on the theater of action as a pastoral people and owners of land. To-day they present the anomalous condition of a nation without a country. From the captivity in Babylon to the fall of Jerusalem in the first century they embraced more and more the advantages of a commercial life. They have posed before the world as an exclusive and chosen people. This, together with their thrift and virility, has engendered hatred among the Gentiles toward them, which has expressed itself in all manner of persecutions. The Jew practically bought his *right* to exist from powerful princes and noted warriors. They paid these "Lords of creation" hard cash for the privilege of living. Paying this tribute once was no guarantee that it would not be exacted again. In order to live out his natural life, and secure the same privilege for his children, it became most necessary for him to make money. The slow returns of a farm could not have secured him the desired lease of life. Besides, he could not have returned to the farm had he wished, since ownership in land was denied him. The natural aptitude of the Jew, his persecutions impelling him to make money, and the strict inbreeding of his race tending to conserve advantageous acquirements—all conspired to develop a people with both the ability and desire to make money. The present age is more liberal, persecution has ceased, but the scars are left—and the Jew remains a money maker.

*Third:* Multiplication and Distribution have thrown together in the same area or in adjacent areas different species and even members of the same species whose interests continually clash. Witness the extensive warfare among different colonies of ants<sup>1</sup>

<sup>1</sup> Grant Allen—Flash Lights on Nature, pp. 186-87—says: "But it (the ant) does not steal fully-grown Turf Ants; their habits are formed, and they would be useless for such a purpose. What the Warrior Ant wants is raw material which can be turned into thoroughly well-trained servants. So it merely kills the adult ants which strive to oppose its aggression, and contents itself with trundling home to its own nest the larvæ and pupæ of the Turf Ants which it has put to flight and vanquished. In process of time, these grubs and cocoons produce

or the fight to the finish between the rabbit and the comical little Puffin when the latter attempts to take possession of the rabbit's burrow for breeding purposes, or the terrific battles between the male seals for the possession of a nuptial court.

"The lion lives alone, or at most in a temporary family; but he needs a vast hunting ground. This territory must be well furnished with game, and he chooses it himself. Having done so he will allow no intruder to poach there. He has fixed its boundaries . . . If another animal of his own species ventures to infringe upon this domain . . . he protests, lays a complaint against the invader after his own fashion, and if the latter does not attend to him, has recourse to the *ultima ratio* of kings and lions—a battle."

<sup>1</sup>"The Wandering dogs of Egypt, have similar customs; each pack chooses a habitat, and, says an eye witness, 'Woe to the dog that strays into a neighbor's territory. Many times I have seen the other dogs fall upon the wretch and tear him to pieces.' 'The pariah dogs of India quarter themselves in the part of the town where they are born. Each of them has his district, 'police fashion,' which he clears of intruders, while for his own part he never crosses its boundaries.'"

Again, natural history abounds in observations of conflicts in bird families while defending their domain and hunting ground. More severe and even deadly they are if the contestants are flesh-feeders or fishers. In these cases ownership in a given area as a hunting-ground is absolutely necessary to the maintenance of life.

<sup>2</sup>The second principle met with in multicellular life, that stands in causal relation to the acquisition of property, or at least that creates conditions necessitating the acquisition of property, is death.

The preparations made by all multicellular life to counterbalance the ravages of death, the attempts to bridge over, as it were, the gap made by death, have a very significant influence in developing the property instinct along with other psychoses. In this connection the plant world deserves notice. First, there is a store of food provided for the tender developing plantlet; second, a protecting coat or pod differing greatly in

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full-grown yellow workers, which, having never known freedom, can be taught by the Warrior Ants to act as nurses and housemaids, exactly as if they were living in their own proper city. I once saw in a garden in Algiers a great pitched battle going on between slave makers and the family of the future slaves, in which the ground was strewn with the corpses of the vanquished."

<sup>1</sup>Letourneau: Evolution of Property.

<sup>2</sup>Death may operate in unicellular life, but if so its operation has no appreciable value for the present problem.

thickness and hardness among different seeds; third, very often an oily or mucous substance in the protecting coat; fourth, the shape of the seed. The significance of this latter property as an aid to survival may be seen when one attempts to crush or to bite in two an apple seed or the seeds of the watermelon, or the orange. Then, too, the possession of hooks, wings, downy-hairs, and other devices for distribution, becomes still more significant when interpreted as a factor, making the chances of reproduction more certain.

In animal life the activities involved in amassing property in order to rear and care for the young till the period of parental independence, appear to exceed in their qualitative aspects those manifested for any other purpose, not even excepting those exerted in behalf of the individual itself. Paternal activities are the crowning efforts of the individual. Let us attend to specific cases. The yucca moth (*pronuba yuccasella*) having pierced with the sharp lancets of her ovipositor the tissue of the pistil of the yucca flower, lays her eggs among the ovules of this flower. She then collects pollen grains from other yucca flowers and kneads them into a pellet which she stuffs into the funnel shaped opening of the stigma, thus fertilizing the ovules. The fertilization of the ovules is necessary to the larvæ, which in four or five days are hatched from the insect's eggs. It has been ascertained that they feed exclusively on the developing ovules which would not develop without fertilization. Should every female yucca moth fail for one season to leave with her eggs the pollen grains—the *only property that she ever amasses*—there would be no forthcoming larvæ to bridge the gap created by the death of the mother moth.<sup>1</sup>

The mother wasps (*Odyneri*) perform a very similar feat. She "makes cells of sand, or any other material, agglutinated with mucous. She deposits an egg in each cell, and with it a store of small caterpillars as food for the larvæ against the time when they shall be hatched. These caterpillars she stings, not so as to kill them outright, in order that they will not dry up or putrify, but enough to paralyze them." The mud wasp of America deposits a half dozen paralyzed spiders with her eggs in the mud cells of her nest.

A certain ant common in Brazil, has the habit of cutting large round pieces out of the leaves of trees, which it conveys to its nest for the purpose of growing fungi upon them.<sup>2</sup>

In October, 1889, the writer [Kline] saw an army of large black ants near the banks of the Colorado in Texas, carrying roundish pieces of leaves cut from the grape vine, The army was twelve

<sup>1</sup>Morgan, C. Lloyd: Habits and Instinct; pp. 13-14.

<sup>2</sup>Allen, Grant: Flash Lights on Nature, p 193.

feet long and eight inches wide. They were marching with "closed ranks," and at a distance looked not unlike a monster green serpent. I followed this military procession with the interest of a schoolboy. The march was brought to a close by arrival of the ants at their nest. This consisted of a mound of earth about 4 inches high and 3 feet in circumference. Many carried their burdens in at once, others dropped them a few inches from the entrance and went in without them. I cut open a section of the nest and found the leaves in small pockets, though in some places they seemed to be scattered without care. Some of the leaves were dry and crisp, others damp and covered with fungi, which growth I am now persuaded was the object of this vast leaf gathering.

The storing up of honey and pollen by bees for young and self is a common observation by every one. Among the fishes the stickle-back and hassar, sometimes called hardback, of tropical America, are noted for the elaborate preparation in their nest building and for the care they maintain over the eggs and young until committed to the water. The nest and its contents constitute the only property acquired by these species.

Many species of spiders, a few fishes,<sup>1</sup> one species of toad (*Pipa*) do not store up food for their young, but pack or carry their eggs about until hatched. In the case of spiders, the young are carried for some time—not unlike the young of the opossum and kangaroo—until they are able to take care of themselves. In these instances the young and sometimes the feeding grounds are the only objects to which the parent lays claim. The great bulk of the property-activities among birds are those exhibited during the season of nidification. Among many species it is the only time in which property of any sort is ever accumulated. It is their season of *mine* and *thine*, the season when the bird lives and works for its kind—selecting material and forming it into a nest, incubating eggs, watching, feeding and protecting the young. All these make up a most unique bundle of property-getting activities which, interpreted teleologically, are called forth in order that the species may survive, that death's gap may be bridged.

Mammalian life is one continuous sacrifice for its offspring. The developing embryo, except in the monotremes, receives freely the life-blood of the mother through a highly specialized vascular system until the time of parturition. Somatic sacrifice, however, does not cease with the close of intrauterine life, but begins anew through the functioning of the mammae—the highest physiological expression of nature's determination to

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<sup>1</sup>Günther, Albert C. L.: An Introduction to the Study of Fishes, pp. 160-62, 1880.

continue the ongoing of her species. These purely physiological somatic sacrifices are insignificant in comparison with the elaborate and continued preparations directed by instinct and intelligence. The most focalized form of these preparations cluster around motherhood and home. They exist for the infancy of their species. Every class of mammalian life makes more or less elaborate preparations in the way of home building and furnishing, preceding and following parturition. These homes consist of burrows in the ground, nests in trees, in logs, among rocks, and houses built on the ground, and in our own species the variety of structures ranges all the way from a cave to a brown-stone front.

The duck-mole (*ornithorhynchus*) constructs for her young a nest of dried grass and gum-tree leaves. The nest is placed about twenty feet above the water level, thus securing the safety of the young even at time of the highest floods. Other monotremes, like the porcupine and ant-eater, instead of building a nest for the young develop a dermal pouch on the ventral side in which the very imperfectly developed young are carried and nourished until they are able to provide for themselves. The duration of the pouch life of the young varies with the species.<sup>1</sup>

The rodents are remarkable for their burrowing and nidificatory instincts. Moles, rats, prairie dogs and rabbits all construct elaborate underground homes. Some are permanent dwellings, as in the case of the musk-rat, the mole and prairie dog. Squirrels, some species of mice, as the dormouse and lerot, build their homes in trees, bushes and even on growing cereals. Others, like the marsh hare, build an elaborate home out of grass on a bit of earth surrounded by water. Such a nest can shelter from four to seven young. Many herbivora like the deer, cow, and giraffe, seek isolated spots or places of natural shelter in which to rear their young. A few ungulates like the pig form a nest in which the young are nurtured for some weeks. It is a singular fact that although the hog is the symbol for greed, it is never known to gather property or provide for the future except at the time of parturition, at which time they often spend from two to twelve hours' labor in making a cozy home for their young.

In the summer of 1897 the writer [Kline] watched a young sow gathering material for several hours and forming it into a nest.

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<sup>1</sup>The kangaroo, according to Owen, suckles her young for eight months. At the eighth month, the young kangaroo may be seen frequently to protrude its head from the mouth of the pouch, and to crop the grass at the same time that the mother is browsing. After leaving the pouch, it continues to return to it for occasional shelter and supplies of food, till it has attained the weight of ten pounds.

She was naturally wild, but my presence did not disturb her. I scattered with a rake the material she had gathered. This angered her, causing her to show fight. As soon as I disappeared she moved the scattered material to a new place and continued the work throughout the afternoon. This work preceded the advent of her family about 12 hours.

Species of *canidae* like the dog, fox, and coyote, and of *felidae* such as the cat, tiger, and leopard, build temporary homes for their young. Their homes are rude and simple, but they defend them, especially while the offspring are young—with greater courage and effectiveness than do some of the more clever home makers. In our own species, as with the rest of mammalian life, two forms of somatic sacrifice are made for the young. Likewise homes are built, furnished and defended.

But the boundaries of motherhood in the human species as in many lower creatures, as will be noted later, "are not limited by these material sacrifices." The Will to Live, the biological struggle to survive has developed in parenthood, the principle of transmitting both racial and individual experience to the young. It is an interesting and significant fact that length of days are added to parenthood in those species whose young can and do profit by conserved experience, while, on the other hand, the life of the parent stops not far from ovipitization or parturition in those species whose offspring neither need nor could profit by the experience of the parent.<sup>1</sup>

The exercise of this principle, viz.: conveying to the young the racial and individual experience, creating opportunities for and encouraging by example and otherwise—varying of course with the differences in the plan of life among the several species,—the exercise of those activities which are essential to the individual's progress begins very probably among the invertebrates, *e. g.*, ants<sup>2</sup> and bees. Its highest perfection, however, has been wrought out in the mammalian type of life.<sup>3</sup> So long as motherhood was consciously and unconsciously aware that wealth was power, and promoted supremacy, she amassed fortunes for her children, but when the idea "that knowledge is power" was grasped, and that, too, of a superior sort, she increased the means to educate her young. So deep-seated among many peoples has the belief grown that education does

<sup>1</sup>"The duration of life is first naturally lengthened when the offspring begin to be really tended, and as a general rule the increase in length is exactly proportional to the time which is demanded for the care of the young." Weismann's *Biological Memoirs*, p. 155.

<sup>2</sup>Letourneau, Charles: *Education in the Animal Kingdom*. *Pop. Sci. Monthly*, Vol. LII, pp. 527-34. See also his late book "L'Evolution de L'Education."

<sup>3</sup>Phillips, D. E.: *Teaching Instinct, Ped. Sem.*, Vol. VI, pp. 188-245.



insure survival and self-protection that it has practically become universal for them.

If, then, the function of motherhood in this larger sense is to equip childhood to live up to the full measure of its potentialities, one would expect to find exhibitions of the growing traits of motherhood even before its advent; one would expect to find some of the mother-traits appearing in certain general relations toward property—relations, too, that are in contrast with those of childhood and old age. The structural, functional, and psychical changes at adolescence are in the main a preparation for motherhood. Our attention for the present, then, will center about this period. Before adolescence child nature is predominantly negative, selfish, as will be shown later. Getting, hoarding, having is the order of the day. Self-sacrifice is the key-word in the budding traits of adolescence. President Hall says: "The young adolescent receives from nature a new capital of energy and altruistic feeling." Dr. Lancaster<sup>1</sup> says, in his study of adolescence: "It is the great period in life for devotion to others, especially in self-sacrificing causes." What should we expect the attitude of the average boy and girl in their early teens toward property to be? Answers to Rubric VII of the topical syllabus printed below furnish a bit of data on this point. Three hundred and twenty answers were received, 145 males and 175 females.

#### TOPICAL SYLLABUS.

##### II. PSYCHOLOGY OF OWNERSHIP VS. LOSS.

I. (a) Relate an incident in which a child for the first time evinced signs of ownership; what, and why that particular object? (b) Likewise a child who is precocious in getting property, or making collections; what use and disposition are made of the articles?

II. (a) Describe a child who wants to own everything; who steals, begs, and cheats to acquire property; (b) a child who desires nothing, will not accept what is given, shuns the duty of custodian whenever possible; (c) a child who persists continually in amassing a special article; also a child with a passion to trade.

III. Describe in detail a quarrel among children about the ownership of some article; how decided; what was done with the article after the decision?

IV. Describe an instance in which a child long desired some toy or plaything, *e. g.*, wagon, gun, doll, and very unexpectedly received it as a gift. Give fully the child's treatment of the article, expression, etc.

V. What have you observed among children concerning the feeling of ownership in property and the influence it had over their attitude both toward the property and valuables in general, *e. g.*, care of books, tools, or a new article of clothing. On wearing the dress, how did it behave to parents, companions, strangers?

VI. (a) What effect has a new overcoat, high hat, high heels, rib-

<sup>1</sup> Lancaster, E. G.: *Ped. Sem.*, Vol. V, pp. 89-91.

bons, plumes, bright-buttoned uniforms, articles of jewelry, buttons, badges, etc., upon the self-confidence, self-assertiveness and personality of the wearer? What is your own experience in such matters? (b) What have you observed about persons collecting stamps, coins, autographs; and poems, ballads, pictures and the like for scrap-books; various and sundry articles for memory jugs, wall ornaments.

VII. (a) Have you noticed any difference concerning the kind of property desired and the intensity of the desire among different ages, sex and nationality? (b) Describe a period or periods in your own life or the life of another in which the value of long-cherished articles suddenly depreciated in your own mind until you relinquished them and accumulated others more to your liking. (c) Have you ever felt burdened by trusts of honor or emoluments or by property and desired to be free from all responsibilities, to abandon your desires and hopes in temporal matters and revel in primitive freedom? Have you personal knowledge, or heard or read anything of one taking the vow of poverty; or one who delights in poverty? What do you know of beggars? Their habits, laws, customs?

VIII. Describe the behavior of a person toward friends, society in general, business and other matters, who has come suddenly and unexpectedly into possession of comparatively much property; the same of one who has lost a fortune by fire, flood, paying securities, etc. *Note the first actions in each case.* Describe your own feeling at the sudden loss of a relative, friend, or property; likewise the feeling of being forsaken, dying in poverty, starving, etc.

IX. Consider a person who persistently and continually seeks positions of trust and honor, loves to be master of ceremonies, also a person fond of giving advice, likes to be consulted on various and sundry matters. *Note the age when these tendencies were first noticed.*

X. (a) Do you know and can you describe persons that have hid money and other valuables in out of the way places, *e. g.*, garden, cellar, roof of house, ditch, seashore, etc.? (b) Describe the worst miser you know; a man who apparently wants the whole earth. Likewise a spendthrift. Emotional and volitional life and home training and surroundings are also desired here.

XI. What member of the family have you observed to be the most favored in Wills or in other ways by the gift of property?

XII. (a) What have you observed of the habits and activities of bees, insects, birds, wild and domestic animals, that exhibit a sense of ownership and the desire to accumulate and preserve property? (b) Have you ever witnessed a conflict between different species or different members of the same species over the ownership of property, *e. g.*, food, particular spot of ground or object? (c) What have you observed or heard of dogs, monkeys, bears, etc., exhibiting a special fondness for a particular stick, bone, article of clothing, etc., or suddenly taking possession and defending at all hazards a manger, pigsty, baby crib, or what not; also of animals gathering food in excess of their needs?

XIII. Have you yourself had periods of intense desire to be rich? and state honestly why and what uses you would put wealth to; or do you merely wish to possess for personal utility?

XIV. Always state briefly age, sex, nationality, temperament, disposition, health, home influences, etc.

M., 20. Made a collection of guns, rifles and revolvers. After 20 he sold all and began collecting music and musical instruments.

M., 13. Took a great interest in collecting birds' eggs. He would walk almost any distance to get a new kind of egg. At 16 suddenly lost interest, wanted a library, horse and buggy.

M. Picture cards, marbles, spools, buttons, tops, and various other playthings lost their value for me at about 8. I then thought it foolish to have such things—wanted things more necessary, more important, things that I could do something useful with.

F., 18. From 9 until quite recently I was very fond of collecting "keepsakes." At a public supper would take a paper napkin; during an excursion to the lakes or seashore would get a peculiar kind of pebble or shell as reminders. At 15 this collection ceased to interest me. I began to gather rocks and botanical specimens, which still interest me.

F., 17. At about 4 I collected rags for doll dress and different colored buttons, about seven I did not care for either, and began to collect stamps and monograms, and picture cards, at 12 began to collect pictures of famous people from magazines. I am still fond of this work.

F., 20. Once had a craze for collecting stamps, this has died out. I have taken up the fad of securing names of my friends on a fan.

F., 19. From 8 till 14 I collected and kept separately pieces of silk, woolen goods and chally, with which I meant to make quilts. I finished one, another half done, a third commenced, when all my interest in them vanished. I soon began to keep programmes and tickets of entertainments which I had either attended or been invited to attend.

F., 23. I liked dolls until nine, then I changed to sled, express wagons and different sorts of books, at sixteen I lost my love for these and took up fancy work and music.

The following are observations of teachers and students:

"I have noticed that very young children desire things that they can see, feel, hear or taste, things that please the senses, when older, 6-12, they desire things that they can do things with, as express wagons, goats, tools, guns, dolls, fancy ribbons and the like."

"I think the value of the property is not taken into consideration with young children, but merely the getting of the property, having it, but as age increases the associations connected with the property, *e. g.*, souvenirs, etc., is valued more than the article *per se*."

"Young children rarely, if ever, make valuable collections, they collect anything that happens to please their fancy. As they grow out of childhood they get things that remind them of past events, things that mean something to them, things that can be used."

"I have noticed that young children desire to possess pictures, gay articles of clothing, toy engines, dolls, etc., etc., older children bicycles, horses, carriages, things that they can use."

"Girls that I have noticed seem to think most of their playthings and a good time until they are ten or twelve. Then they begin to care more for dress and appearance until they are 15 or 16, and then the desire to be considered smart and to be admired begins."

These reminiscences and observations offer nothing that is brand new, but they do continually remind one of his own experiences, they tap, as it were, the reservoir of the common mind and set flowing afresh the stream of life's experiences. And what do we read in them? First, that property getting in childhood is instinctive, an activity not to be suppressed or thwarted. What the child collects is a matter almost wholly of environment. The intrinsic value of the article plays no role, but collect it

must and will; second, that this promiscuous but continuous gathering is modified somewhat and directed to the accumulation of articles that can be worked upon, articles on which the motor apparatus of the child may repeatedly operate and not unfrequently develop a rude mechanical skill;<sup>1</sup> (these mechanical and industrial activities appear more or less prominent in the years just preceding puberty); that at adolescence the desire for material inanimate things is transferred to those of the animate, social and spiritual world. Now the friendship, the good opinion, the good will, the love, the confidence of, and for others constitute the world of values. For these things individual life itself is not too dear a sacrifice. The adolescent must love and be loved, must have friends and associates. "I used to collect picture cards, now I collect photos." "I grew tired of monograms, and have instead a fan with my friends' names written on it." "I gave up dolls and the like and collected napkins and other souvenirs that would remind me of stated occasions."

Childhood wants objects satisfying the senses and the instinct to have, adolescence wants friends and society to whom it may offer sacrifice. It is the beginning of the operation of that universal principle which offers up the best that is in the individual as well as his most valued belongings to the welfare of the species.<sup>2</sup> As the ferment of the adolescent simmers down and the possibility of his future begin to take shape he sets himself to accumulating goods and valuables that shall meet the drafts upon him at the time when life's stream is broadest and deepest—the period of motherhood.

There is still another time of life in which the attitude toward property invites investigation. I refer to the climacteric and post-climacteric periods of life. This period begins on the average at about forty-five<sup>3</sup> in the female,<sup>4</sup> and from five to twenty years later in the male.<sup>5</sup> If by this time motherhood has furnished the offspring a home, has equipped them with money and education, in short, "set them up in business," is there still left anything to do for the welfare of her offspring? The fact that life in the human species does continue long after the climacteric argues that it must have some significant purpose. What is this purpose, this service which has earned for parenthood this long lease of life? What sort of property is of most worth in the eyes of the parent? To get some light on these questions we asked the questions found in Rubric IX of the syllabus. It

<sup>1</sup> Groos, Karl: *Spiele der Menschen*. Jena, 1899. pp. 90-147.

<sup>2</sup> Brooks, W. K.: *The Foundations of Zoölogy*, pp. 89-92.

<sup>3</sup> Tilt, Edward John: *The Change of Life*, p. 26. 1882.

<sup>4</sup> Stockham, Alice B., M. D.: *Tokology*, p. 276. 1893.

<sup>5</sup> Acton, William: *Reproductive Organs*, pp. 248-252. 1883.

will be noticed that no particular age limits are specified in the question, for obvious reasons. One hundred and fourteen papers were received on this rubric. 62 relating to males, 49 to females, and 3 to both. The ages range from 3 up to 66 years. 31 were accounts of persons above 40 years of age, 60 below 40, and over 50% of those below 40 were included between the ages 16 to 25. The following are the condensed reports of a few:

3. M., 20. "Always fond of giving advice, has grown more so within the past two years. Nothing pleases him better than to be consulted, even in trivial matters, as quarrels between boys or girls. He finds pleasure in correcting mistakes in grammar and pronunciation."

M., 40. Wishes to be leader in every new enterprise, if he cannot have this place he sulks and says he will have nothing at all to do with the matter. Gives advice whether wanted or not.

M., 50. Enjoys being trusted, to fill responsible positions, to lead in all the societies, especially the new ones, in his town. He enjoys giving a detailed talk in a religious meeting.

M., 22. Is continually putting himself in a position so that he will be appointed to usher at some affair, to act on a committee or have some office. I have observed this in private and secret societies, and also in church work. Is offended if not consulted about new enterprises.

F., 50. Always telling what to do, what dress to wear; she likes to be consulted in everything you are going to do; and very often in what you are to say to different people. She feels hurt if you do not follow her advice.

F., 32. Interests herself in every one, asking them questions and thus giving them advice. Likes to be consulted if there is anything special to be done in the town, if not consulted, she perhaps will not do anything toward helping.

F., 62. Is very fond of giving advice, especially in church matters—believes that if her advice is not followed the work will result in a failure.

F., 66. Gives advice to every one on every occasion possible. It makes no difference whether she has ever met them before or not.

M., 60. A school teacher, family grown and well to do. He himself had plenty for the rest of his life, yet he continued to teach. When asked why he did so, replied that his children might need his help.

M., 65. Owner of a large factory. Turned entire business over to his two sons, yet he always took the keenest interest in their enterprises. Grew anxious and sympathized with them during reverses and kept a watchful eye on their successes.

It would be palpably absurd to expect to find from these returns, in fact to find from personal observation, that fondness for offices of trust, for being consulted and giving advice is confined exclusively to middle life and old age. What we do see, and these returns emphasize it, is that from childhood to old age there is an unsatisfied thirst for power in some form or other. The methods of acquiring it, and the uses made of it, are as many as the individuals involved. No specific statements can possibly be made. In a very general way we may say that in childhood the desire for power is expressed in vague physical terms. The boy courts physical prowess and usually establishes

his authority over his fellows by displaying it in some extravagant form. Youth and manhood measure power in physical, material, and mental terms. How much can I do, how much can I make and acquire, only "to make money hand over fist," are among the serious questions of manhood. Then, too, power in the realm of mentality has a fascination for them. Its normal expression is the desire for that power which will equip for great tasks, that will aid to solve large problems, and make for success in life. In middle life and in old age the desire for power is shifted more and more toward the realm of mentality. The supremacy of the aged consist in what they know—not in what they can do or have. They are valuable to the race for the experience that they formulate and transmit as advice, precepts, wisdom and oracles. This is the period of true statesmanship, of wise men and law givers. The common mind in all lands and times has recognized and approved this. Accordingly, we find the things that are of most worth in the eyes of parenthood during the latter period of life are teaching, advising, and giving counsel to those engaged in the activities to the prime of life.

*Conclusions.* The effort in life to bridge the gap of death has given us *home* and *motherhood* with all their virtues<sup>1</sup> attendant.<sup>2</sup> They have become the motive to the greater part of human endeavor. Through them the great mass and tangle of property getting in civilized life takes on purpose and meaning. Parenthood amasses wealth, discovers and turns to account the forces of nature, capitalizes experience, concentrates within manual compass the feelings, doings, and wisdom of the long past and sees to it that all these things are duly possessed by her offspring. All the stocks and bonds of motherhood, all her landed estates, all her aggregations of lore and learning, all her inherited acquisitions and transmitenda whatsoever have been accumulated by her to pass as legacies to her offspring, that they may survive and live a complete life. This point of view enables one to see in the work and care of parenthood for offspring the origin of altruism, to which *property-getting-and-giving* has ever been the richest fertilizer, aiding in the flowering out process of all the altruistic sentiments. This must be so, for did we not punctuate our philanthropic intentions with a share of our property in some form or another, they would soon become as "sounding brass or a tinkling cymbal."

## SECTION II. ANTHROPOLOGICAL.

In order to see the general ideas of the savage in regard to property it is necessary to find how much property the savage had,

<sup>1</sup> Ribot, Th.: *The Psychology of the Emotions*, pp. 280-81.

<sup>2</sup> Espinas: *Les Sociétés Animales*, pp. 444.

what his relation to this was, how held, etc. Some savage peoples, such as those found wandering in the woods of Borneo, Forest Veddahs of Ceylon and others, possess almost nothing. In this respect they are inferior to some animals. Others have merely their rude weapons.<sup>1</sup> Of necessity, these can accumulate nothing; as Mr. Keary says: "In order that social customs should attain any development the means of existence must be sufficiently abundant and easily procurable to permit some time to be devoted to the accumulation of superfluities or supplies not immediately required for use. The life of the primitive hunter and fisher is so precarious and arduous that he has scarcely either the opportunity or the will for any other employment than the supply of his immediate wants."<sup>2</sup> It is the satisfaction of these wants that measures his desires. The little he has is mere physical possession.

When we do, however, find primitive man holding property, it is to a large extent property in common. Letourneau<sup>3</sup> shows this very exhaustively, also Sir Henry Maine<sup>4</sup> and Laveleye.<sup>5</sup> La Fargue says: "very gradually did the idea of private property which is so ingrained in, and appears so natural to, the Philistine mind dawn upon the human mind."<sup>6</sup> Darwin, in his voyage of a Naturalist, tells how among the Fuegians, if a piece of cloth be given to one, it is torn into shreds and distributed among all. Mr. Leslie<sup>7</sup> says "a limited stock of certain personal things was early permitted," implying ownership in common. "A large body of facts combines to show that property was a social before it was an individual sentiment, and distinction between owners was at first assigned to one tribe of gens rather than to another. The first notions of property seem to be communal."<sup>8</sup> "The several forms of ownership tend to show that the oldest tenure by which land was held was by the tribe in common."<sup>9</sup> Many other investigators have held this view to a greater or less degree.<sup>10</sup> They find traces of the system in Europe, Asia, Africa and North and South America, in Australia and the Malay Archipelago. "Everything leads us

<sup>1</sup> See Letourneau: Property, its Origin and Development. Chap. II, p. 24 ff.

<sup>2</sup> Keary, C. F.: The Dawn of History. 1888, p. 137.

<sup>3</sup> Property, its Origin and Development, pp. 401. London, 1892.

<sup>4</sup> Ancient Law. Also History of Early Institutions.

<sup>5</sup> Primitive Property.

<sup>6</sup> Evolution of Property, p. 28. London, 1890.

<sup>7</sup> Introduction to Laveleye's Primitive Property.

<sup>8</sup> Ward, L. F.: Dynamic Sociology. Vol. I, p. 483.

<sup>9</sup> Morgan, L. H.: Ancient Society, p. 542.

<sup>10</sup> In Germany, Haxthausen, Mauer, Engels, Bachhofen, Valentine, Mayer. In England, Seebohm, Gomme. In Russia, Schopotief, Kovalsky.

to believe collectivism was at its maximum and individualism at its minimum."<sup>1</sup> The reasons for this are apparent. First the very weakness of man made co-operation, a combining of strength and effort, necessary. As Topinard says: "Man lives in society because he has to do so like many animals."<sup>2</sup> Property thus was acquired in common. Furthermore it was necessary to the existence of the horde or tribe that it should be at peace with itself—the closer solidarity, the greater power. This would tend to a common ownership. As long as the savage had food to eat and shelter from the cold, he was satisfied. We must remember that the savage is a being of very limited experience, that his ideas of the relation of things are very vague. He has the physique of the man with the mind of the child. His conceptions of himself and his own body are weak and unanalyzed. Individual ownership implies that the particular object is shut off, boxed up as it were, labelled mine. This is beyond the savage.<sup>3</sup>

This primitive communism gives us a fair index of savage character and mind. It is the best of evidence of mental dullness, physical laziness, and primitive lethargy. It shows that the savage had not risen to the level of progression; it demonstrates the lack of individuality, of that self-assertiveness and push so essential to development. Men living under a system of communism are, as Dr. Brinton says, "classified like so many bricks."<sup>4</sup> It is primarily a system of monotony revolting to an independent, virile manhood, and to that active type of mind which glories in life as a struggle. This régime, however, had its use. Long continuance under a communal system developed those sentiments of respect for, and toleration of, another so essential. Human society is based on mutual toleration, on each man's giving up something for the good of all.

It was when man began to get clearer ideas of his own body, to distinguish between the self and non-self, that the idea of individual ownership became possible. The lack of knowledge of the savage of the limits of his own self are surprising.<sup>5</sup>

<sup>1</sup> Primitive Folk. Elie Reclus. N. Y., 1891.

<sup>2</sup> Anthropology, p. 151.

<sup>3</sup> Principles of Sociology, Vol. I, p. 68, Mr. Spencer says the savage "lacks the extended consciousness of individual possession and under his conditions it is impossible for him to have it established, as the sentiment can be only by multitudinous experiences of gratifications which possession brings, continued through several generations; it cannot arise where circumstances do not permit these experiences. Beyond the few rude appliances ministering to his bodily wants, the primitive man has nothing that he can accumulate."

<sup>4</sup> Brinton: Pursuit of Happiness, p. 230.

<sup>5</sup> Taylor, E. B.: Early History of Mankind, p. 296 ff.



When man arrived at a clear notion of himself as an isolated individual, began to look in upon himself, he must have begun to get glimpses at the concept of individual ownership. For we find that the concept *mine* and self-consciousness are mutually dependent. Those states which come up into consciousness, one can be aware of, but not unless they are tagged *mine* will there be self-consciousness. It is here where the term *mine*, the conscious idea of ownership, must have originated in giving expression to these internal psychic states. The concept *mine*, then, is the focal point in self-consciousness. In order that a person may recognize these parts of himself as parts of himself, they must be recognized as *his* own. Neither memory of nor cognition of experiences or psychic states can be recognized as being a part of the ego if this concept *mine* is not present in them; if the individual does not recognize himself as the *owner*. So it must have been that the idea of individual ownership arose in recognizing internal psychic states, together with one's body and bodily feelings as being parts of self or belonging to self.

The earliest forms and usages of individual property show there was a sort of transition period. That the savage could not entirely think of external objects as *mine* and *mine alone*, unless they had a subjective element or subjective relation. Letourneau says: "The first private property was in objects forming, so to speak, part of the person, such as weapons and ornaments made by the possessor himself, and generally put in the grave with him."<sup>1</sup> "Australians possess for personal property the objects attached to their persons, such as arms or ornaments in the ear, lips, and noses; or skins of beasts for clothing; stones laid in baskets woven of bark fastened to body of the owner; personally appropriated by them, so to say, incorporated with them. These objects are not taken away from them at death, but are burned or buried with the corpses. Names are among the primary individual property we meet with."<sup>2</sup> "Rude weapons, fabrics, utensils, apparel, implements of flint and stone, personal adornments represent the chief items of property in savage life."<sup>3</sup> "In primitive society property extended to single personal belongings, to articles of adornment, to trophies of the chase or war, and to tools and weapons."<sup>4</sup> Dr. Rink says, the Eskimo recognizes ownership only in weapons, fishing boats and tools. Von Martius, speaking of certain Brazilian Indians, says: "Scarcely anything is considered strictly as the property of the individual except

<sup>1</sup> Letourneau: Property, its Origin and Development, p. 365.

<sup>2</sup> La Fargue: Evolution of Property, p. 17.

<sup>3</sup> Morgan, L. H.: Ancient Society, p. 527.

<sup>4</sup> Giddings: Elements of Sociology, p. 246.

his arms, accoutrements, pipe and hammock. "Every man claims a right in what he can make."<sup>1</sup> Haddon, in describing a stone axe found among the people inhabiting the islands about New Guinea, says: "The value of such an object seems to depend on the amount of work required to produce it; thus we arrive at certain primitive ideas. That work done gives ownership."<sup>2</sup>

We see from this that early ideas of individual ownership in regard to external things rose out of the idea of work put on them. The savage only possessed those things he made with his own hands, as his weapons, tools, utensils, etc. These things first existed as ideas in his mind, he thought of these in a subjective way as his own. And when these through the moulding and forming of material with his own hand and by his individual labor took on external form, it was but natural that the idea of individual ownership should extend to them. The fact that most all objects of personal property are attached to body, and the custom<sup>3</sup> of burning, breaking or burying these articles with man at death is evidence of the close relations of internal concept of ownership and external. Another suggestive fact is that the earliest forms of weapons were pushing weapons.<sup>4</sup> This seems to point to the belief that the savage considered his weapons almost as a part of his body rather than as some external object he could wield.

This attaching and putting of articles owned on the body intensified the feelings of ownership, through the feeling of pleasure arising from continual contact and because of the idea of permanence of ownership arising from the feeling that articles were safe from danger when on the person. This element of safety played a great part in the savage mind. Can we not account for the rise of ornaments in this way? Did not the attaching of things on the body for ornament take origin originally in this putting things owned on the body? Can we account in any better way for some of the absurd customs of loading one's body down with trophies, presents, weapons, etc.<sup>5</sup> That this custom of wearing property prevailed, resulted from the fact that the savage learned the value of individual property in individuating, in marking one man off from another. And so ornaments in general may have taken rise.

This whole development of idea of individual ownership in

<sup>1</sup> Brown, B.: *Races of Mankind*, Vol. I, p. 59 (Speaking of Northwest American Indians).

<sup>2</sup> *Evolution of Art*, p. 78.

<sup>3</sup> Letourneau: *Sociology*. Chap. on Funeral Rites.

<sup>4</sup> Cushing: *American Anthropologist*, 1895. Article on the Arrow.

<sup>5</sup> For the way people loaded themselves down, see Spencer's *Sociology*, Vol. II. Chapters on presents, trophies, badges, etc.

the savage mind but indicates one of the great influences property has had in the evolution of mind. As has been shown previously the savage was originally in a state of lethargy. The only incentive to activity was to satisfy bodily desires. But when man had the notion of acquiring in order to individuate self, to increase self-importance, when he began to realize what individual property could do, life took on a different aspect for him. He broke away from his laziness, threw off his lethargy. His mind was stirred into activity. His desires became more numerous and extended to various things. And, above all, the desire for individual property is his first great incentive to labor. The effect of all this on developing mind hardly can be overestimated. Self-consciousness, together with all those feelings of pride, emulation, rivalry and competition arise out of this. Perhaps there is no one greater result arising from this than the development of attention; as Ribot<sup>1</sup> says, voluntary attention is the product of civilization, and that it is easily shown that before civilization, voluntary attention did not exist and that work is the concrete, the most manifest form of attention. But the ability to work has not come without a struggle. For as Ward<sup>2</sup> aptly puts it, "labor is not the natural condition of man. It must have acquired a powerful motive to curb and steady the wild and adventurous desires of the human heart and compose them to the monotony of toil." This incentive was the desire for individual property and the love of power that property brings. The labor may have been the enforced labor of women and slaves, but property was its incentive; and if attention has resulted from continued labor, we owe its development originally to individual ownership.

With the idea of individual ownership firmly rooted in the human mind, the tendency would be for the individual to claim all things he desired. The question now arises, not what are the motives for individual acquisition, but what are the motives which cause men to respect each other's possessions. If you presuppose that the proprietary right is an inherent characteristic of mankind, this question of toleration or respect for the property of one another is easily done away with. This is exactly the view the popular mind and superficial considerations would assume. Occupancy was possession. Each man recognized the natural right of the occupant. This is Blackstone's view, that of Roman law and the view in general. Sir Henry Maine<sup>3</sup> shows this view of the property right being inherent in man to be unscientific and irrational. Men had to learn

<sup>1</sup> Psychology of Attention, p. 43 ff.

<sup>2</sup> Dynamic Sociology, Vol. I, p. 541.

<sup>3</sup> Ancient Law, p. 237 ff, Chap. VIII.

to respect the rights of one another, and the proprietary right, as every other such abstract notion, was a growth in the mind of man.

If some right to possess individually did not exist, the idea of individual ownership could never have gained strength. For to own a thing implies a feeling of permanence in it; that one will possess it for some length of time. As the bulk of property was common in savage communities, and as the individual property was slightly confused with one's body, the idea of respect for possession among one another did not have to be very strong. As is natural under these conditions, individual ownership only cropped out at first in those things which naturally fell to the share of individuals and those things which did not interfere with common ownership. Among these might be classed presents given to those performing brave deeds in time of war, and trophies taken on the field of battle or in the chase; rewards of bravery, all of which were great stimuli for protecting and looking after common interests. Another way private property gained admittance was through inheritance. Sir John Lubbock thinks that in cases of legal revenge and punishment we can trace the origin of private property. He says: "When any rules were laid down regulating the amount or mode of vengeance, which might be taken in revenge for disturbance or where the chief thought it worth while himself to settle disputes about possession, and thus, while increasing his own dignity, to check quarrels which might be injurious to the general interests of the tribe; the natural effect would be to develop the idea of mere possession into that of property."<sup>1</sup>

Of all the different kinds of individual property which have effected most the evolution of mind and strengthened the idea of proprietary right, woman as property is perhaps the greatest. Letourneau, speaking of the position of woman among Australians says: "she is his domestic animal, his thing, his creature whom he has a right to beat, to hurt, to kill, or even if need be to eat."<sup>2</sup> "The woman is only a chattel on the same footing as the cow and the sheep, and she is accordingly appraised in terms of the ordinary media employed in the community, whether it be in cows, horses, beads, skins or blankets."<sup>3</sup> "In most brutal tribes man asserts his right of ownership in woman. The process of mating is by brute force, marriage is by robbery, and woman is in wretched slavery."<sup>4</sup> "Women are prized as wives, as concubines, as drudges; the

<sup>1</sup> The Origin of Civilization and Primitive Condition of Man, by Sir John Lubbock, p. 318.

<sup>2</sup> Letourneau: Sociology, p. 379 ff.

<sup>3</sup> Haddon: Evolution in Art, p. 229.

<sup>4</sup> Brinton: Races and Peoples, pp. 53-54.

men having been killed, the women are carried off along with other movables."<sup>1</sup> "Marriage as among other Indian tribes is simply a matter of purchase."<sup>2</sup> "Among all lowest hunting savages among Australians, Veddahs, Botucudos, the woman is not merely a sexual being. Her work is more valuable than her sexual qualifications, for to her share falls the taking apart and constructing the huts, the carrying of property during wandering, the gathering of insects, roots and fuel, the finding of wood, and most of all the preparing of food."<sup>3</sup>

The reason woman is held as property is due to her physical weakness and her peaceful character. As to why she was held as private property instead of common, there are several reasons. Women were more numerous than men. For while men were killed in war, women were held as captives.<sup>4</sup> A man could generally have a sufficiency of wives without interfering with the interests of others. In addition to this Westmark<sup>5</sup> has clearly shown that among all savage peoples some definite marriage relation existed which would naturally result in the ownership in women being individual. It is readily seen what a valuable chattel woman must have been. For all the hard work, all the drudgery, she performed. She too had to use all her ingenuity to provide food for her husband when he returned unsuccessful from the chase. If not she might become a victim to his appetite. "Among savages it is really the women who perform all the real labor of their societies."<sup>6</sup> And this enforced labor of women was not without its effects. For, as Dr. Chamberlain says, woman is generally more intelligent than man where stress is hard. This is because the stress falls on the woman and it is her cunning, her ingenuity that is called into play. Prof. Mason<sup>7</sup> likewise shows, many of the great arts took rise in the mind of woman. It was the result of her being property and forced to labor. Not only did she institute many things of value, but we cannot but believe that it was she who preserved art at times when the savage entered upon a predatory life and would have lost all the progress he had gained. Reclus in his *Primitive Folk*, speaking of the western Inoits, says: "Woman domesticated the animals."<sup>8</sup> These are but instances of the influence that property in women ex-

<sup>1</sup> Spencer, H.: *Principles of Sociology*, p. 650.

<sup>2</sup> Brown, R.: *The Races of Mankind*. Vol. I, p. 95.

<sup>3</sup> Cunov, Heinrich: *Die Oekonomische Grundlagen Mutterschaft*. Zeit. XVI, quoted from Solotaroff, H. *American Anthropologist*, Aug., 1898. Article—Origin of Family.

<sup>4</sup> Spencer, Herbert: *Principles of Sociology*, p. 650.

<sup>5</sup> *Human Marriage*.

<sup>6</sup> Ward: *Dynamic Sociology*. Vol. I, p. 644.

<sup>7</sup> *Woman's Share in Primitive Culture*.

<sup>8</sup> p. 58.

erted. So too it was in woman's mind that the idea of cultivating the soil first originated, out of which grew that greatest of institutions, agriculture. "It was the genius of woman that invoked the aid of the fire fiend to devour the forests, it was she who cleaned up the fields, planted the seeds, gave to the crops of maize and pumpkins all the cultivation they got."<sup>1</sup> "Man is a warrior and hunter; he resigns to his wife the labor of the fields."<sup>2</sup> "It is not impossible that this great revolution was specially due to women who alone were primitively charged with the collection of wild fruit and to whom for a long time agriculture was exclusively left."<sup>3</sup> In all this we see how property has influenced the development of mind. First it was because woman was property that she was compelled to labor. Secondly, the result of this labor was that woman was the main provider and did most of the property getting. And it is this labor, the ingenuity called forth in acquiring property which results in making woman superior intellectually to man, and history shows that property getting and intelligence are ever correlated.

The growth of agriculture, together with domestication of animals, caused a revolution in property and property ideas as well as in society. From it resulted the introduction of slavery in men, the domestication of animals, abolishing cannibalism, the growth of agriculture requiring more laborers. The domestication of animals and the growth of slavery gave rise to a value which could be accumulated and something that could be used as a commodity in exchange.<sup>4</sup> Agriculture and the domestication of animals, by making means of subsistence procurable without co-operation, did away gradually with all ownership in common, the idea of proprietary right having gradually developed through an ever increasing individual ownership. The domestication of animals must have had great effect on the primitive mind, for here, as Morgan says, was a "possession of greater value than all kinds of property known previously put together. They served for food, were exchangeable for other commodities, were useful for redeeming captives, for paying fines, and as a sacrifice for the observance of religious rights. Moreover, as they were capable of indefinite multiplication in numbers, their possession revealed to the human mind its first conception of wealth."<sup>5</sup> This conception of wealth has played no mean role in the evolution of mind as well as civilization. What inventions, what discoveries, what knowledge

<sup>1</sup> Woman's Share in Primitive Culture. Mason, O. T., p. 147.

<sup>2</sup> La Fargue, P.: The Evolution of Property, p. 37.

<sup>3</sup> Letourneau: Property, its Origin and Development, p. 366.

<sup>4</sup> Our word pecuniary is derived from pecus, cattle.

<sup>5</sup> Morgan, L. H.: Ancient Society, p. 543.

have not resulted directly or indirectly from this seeking of wealth. The science of chemistry was born and nurtured in that of alchemy—a vain attempt to make gold. Agriculture and the acquisition of property through it, has taken first rank in widening the horizon of the mind, to say nothing of their effect on progress. It was agriculture which tended to identify the family with the soil<sup>1</sup> and to give man a stability of mind and character, one might almost say, a reflective turn of mind which a wandering life would militate against. Further, to succeed in getting wealth from the soil or from the raising of animals necessitated a careful observation of plants and animals; one, too, must learn of the weather and the seasons. And it was thus in seeking for wealth that man was training those powers of observation so necessary to the scientist; at the same time he was picking up valuable information in natural philosophy.

Dress is a class of property which also has had much influence on the development of mind. "Dress," says Professor Starr, "generally has been developed out of ornament. That it has, after being developed, often been turned into a modest covering and a protection, is unquestioned."<sup>2</sup> "Ornaments are of two kinds—those directly fixed into the body and those attached by a cord or band. As soon as man hung an ornament on such a band, dress evolution began." Dress had a great influence on mind because it is one great means of expressing one's individuality by external show, and also because of its power in marking off or individuating. The only individuality some people have is that expressed in their dress. (So it is that, as Professor Starr says), "in looking over the history of the race, we find many inventions have resulted, many discoveries been made, many arts been developed, in pursuit of new materials for attire and general intelligence has been increased thereby."<sup>3</sup>

Along with the great influences of property on mind and civilization modifying and changing both man's life and society, we should naturally expect there would have been developed a type of mind peculiarly adapted for the acquisition of property. Brooks Adams<sup>4</sup> attempts to show that economic competition has developed or selected minds best adapted to control and a type of mind in which love of gain is paramount, with indifference to the opinion and feelings of one's neighbors, with much self reliance and unusual industry. He calls this the economic type of mind. La Pouge goes further.<sup>5</sup> He thinks he has proven

<sup>1</sup> Morgan, L. H.: *Ibid.*, p. 543.

<sup>2</sup> Popular Science Monthly, Vol. XXXIX, p. 789. Also Letourneau: *Sociology*. Chapter on genesis of shame.

<sup>3</sup> Popular Science Monthly, Vol. XL.

<sup>4</sup> Law of Civilization and Decay.

<sup>5</sup> Les Sélections Sociales.

clearly that the wealth producers or money makers and non-money makers have two distinct types of head as well as mind. The dolicho-cephalic are the money makers; the brachio-cephalic, the non-money makers. Though this may be going too far, still La Poughe has brought forward much evidence. At least it but shows that property getting as well as the having has had a much wider influence than is imagined.

In connection with property, especially property as power, are found some psychoses of not a little value: obedience to command and willingness almost amounting to a desire among a mass of people to be led; the tendency of people to believe in and give way to a man who makes large assumptions; the general feeling of contempt for a man who performs manual labor, in particular the agriculturist, arising from the time when no man who labored was a gentleman; considering wealth instead of merit the mark of superiority; feelings of servility and littleness in the presence of wealth. Pride is but a sense of superiority arising from the fact that one owes much of value and worth to society and friends. Vanity is the same feeling minus any such possessions.

Mr. Worthington says: "The attainment by man of that state of civilized life which suggested the advisability of, or necessity for, any system of government was coeval with the development of man's acquisitiveness and the possession of individual property. In other words, the idea of government was suggested and the institution in its primitive form was established chiefly for the protection of property and life; and the proper functions of government are to this day fully exercised when protection to life and property have been secured and peaceful and uninterrupted possession of these established and maintained."<sup>1</sup> The strength of the aphorism "property is power," is apparent from this standpoint. He who possesses most is most powerful. Not only is this true in the history of the individual, but also in the history of civilization. Dr. Brinton says: "So far as we can trace the history of man from the Old Stone Age upward, the one efficient motive to his progress has been the acquisition and the preservation of his property. This has been the immediate aim of all his arts and institutions, and the chief incentive to individual exertion."<sup>2</sup> L. H. Morgan says, that monogamy resulted from increase in the variety and amount of property through the establishment of inheritance in the children of its owner; that the influence of property in the civilization of mankind it is impossible to overestimate; that it was the power that brought the Aryan

<sup>1</sup> Worthington, S.: *Politics and Property, or Phonocracy*, p. 6.

<sup>2</sup> Brinton, D. G.: *Pursuit of Happiness*, p. 118.



and Semitic nations out of barbarism into civilization; the growth of the idea of property in the human mind commenced in febleness and ended in becoming its master passion; that government and laws are instituted with primary reference to its creation. It introduced slavery and, after an experience of several thousand years, it caused abolition of slavery upon the discovery that a free man was a better property making machine.<sup>1</sup> Montesquieu, in his *L'Esprit des Lois*, tells how that in the Middle Ages the fear and superstition of the people was worked upon by both nobles and priests to embezzle them out of their belongings. And it was this wealth which by easing the hard struggle with cosmic forces for a few select ones made possible and gave opportunity for the rise of that learning and culture which has had such a great effect on the development of mind as well as civilization.

The history of the evolution of culture has been the history of the leisure class. The leisure class had its birth with the beginning of wealth and was alone made possible by the establishment of ownership.<sup>2</sup>

In the light of the preceding, we cannot but conclude that there has been no greater factor than property in broadening and developing mind and civilization.

### SECTION III. OWNERSHIP IN CHILDREN.

The study of the child mind in relation to ownership takes an increased interest and value, if its property activities be regarded both as *recapitulatory* of the racial attitude to property and *anticipatory*<sup>3</sup> of the adult's serious wrestling with property and fortune. Cataloguing the activities under these two categories is left largely to the reader. We indicate here from answers to the questionnaire, the beginnings of the sense of ownership and property-getting activities in general as found in child life.

In answer to rubric I. (a) [see syllabus] 185 returns were received—93 males, 92 females—ages from 3 months to 72 months. These are divided into six groups,—3 to 6 months, 7 to 12 months, 13 to 18 months, 19 to 24 months, 25 to 36 months, 37 to 72 months.

#### *First Group, 3 to 6 months, 39 cases.*

F., 4 months. Cries whenever bottle is taken from her. Even if bottle was empty would not let it leave her sight unless given another.

One lady writes: The first signs of ownership are exhibited when the child will not allow others to interfere with its bottle.

<sup>1</sup> Ancient Society, p. 505.

<sup>2</sup> The Theory of the Leisure Class. Thornton Problem, N. Y.

<sup>3</sup> Groos, Karl: The play of Animals. 1898.

F., 4 months. Never showed sense of special ownership until another baby was brought to visit her. The second child was given F.'s rattle, whereupon F. began to cry and reach for it.

F., 6 months. In trying to amuse this child I took its rattle. She at once stretched out her hands uttering little sounds as *um, um*,—first time she had laid claim to anything.

F., 6 months. Given a rag doll, seemed to know doll belonged to her. When taken from her or when another child had it, began to cry and held out its hands immediately.

F., 4 months. Played with a rubber ring. I picked it up, she began to cry and hold out her hands. Put it down and she stopped crying. Repeated with same result.

*Second Group, 7 to 12 months, 58 cases.*

M., 8 months, was given a go-cart and after riding in it at different times, M., age 7 months, sat in it. M., 8, cried, pulled his dress and hair until he got it.

F., 12 months, was given a little white rocking chair in which she sat most of the time, would not let any one touch it.

F., 12 months, very fond of her cradle, always liked to be in it. If she saw any one sitting in it, she would endeavor to pull them away and would cry.

F., 9 months, had a tin rabbit that was pulled around by a string. When another little child took it she would reach her hands for it.

F., 11 months. Before she could walk or talk, seemed to think she owned her mother's lap and cried when any one else attempted to occupy it.

*Third Group, 13 to 18 months, 27 cases.*

M., 13 months. When Edward saw another child sitting in his little red chair, he at once wanted to sit in it. He would not sit in his sister's chair.

M., 18 months, owned a cap. My brother put it on his head. The little boy ran to him and cried "Take that off, that Harry's hat."

F., 18 months, had a little blanket she would not go to sleep without. She always cried "My blankie, my blankie," till she got it.

F., 18 months. Had a pretty little chair; if other children would sit on it or put their dolls on it, she would cry until they were taken off.

*Fourth Group, 19 to 24 months, 23 cases.*

M., 20 months. Had been given a great many playthings, but the things he seemed really to care for and *to own* were a woolly lamb and some building blocks.

M., 24 months, given a jumping-jack. He never seemed to make any claim to it, until one day a stranger said it was his. Immediately he declared that it was his.

M., 24 months, showed plainly he owned a toy express wagon by taking it away from a boy who came to see him, saying "That's my waggie."

M., 20 months, was given a toy horse. His brother wanting to play with it was going to take it away. J. would not let him have it, nor would he ever let him play with it.

*Fifth Group, 25 to 36 months, 24 cases.*

F., 36 months. Mother bought her a woolly coat. She was very proud of it and wanted to wear it whenever she went out. She did not like any one else to touch it.

M., 36 months, claimed one of his father's canes as his horse.

M., 27 months, had a piece of clothes line which he was very fond of. He used to throw it over the back of a chair and play horse with it.

F., 36 months. When years old saw a toy kitchen which she called a dust pan. From the day she saw it she was never quiet until her mother bought her one to play with.

*Sixth Group, 37 to 72 months, 10 cases.*

F., 48 months. When she was four years old, everything that was given her she kept in a box placed in one corner of a room. She was much displeased if any one should even raise the lid of the box.

F., 5 months, used to hide or sit on all her playthings.

F., 72 months. Owned a ball of which she was very fond. Kept it hid where no one could find it. Having a place for and hiding articles possessed are the common features of this group.

Our interest in these returns lies in what they suggest as to the way in which the property *instinct* and *concept* became etched so deeply into the mind.

It appears that those things which give satisfaction to the sensory side of the human organism are the earliest to be drafted in as property. Gradually objects that may be acted upon, that exercise the motor side are laid claim to. The human infant, like the young of all vertebrates, reacts the earliest and most vigorously at all those points that give information about want-satisfying objects. It goes without saying that objects which satisfy these "want-points" are the ones first claimed. It is not chance, then, that the highest per cent. of objects claimed by infants 3 to 6 months of age should be those that satisfy hunger or are instrumental in doing so. In the second group—7 to 12 months—objects appealing to sight are far in the lead. Objects satisfying the sense of touch rank next, followed by those appealing to taste and smell (hunger). The eye soon becomes the chief mind-feeder. Its objects have a permanency essential to the growth of the property concept. Objects that administer to bodily comforts, as a "special chair," "mother's lap," "a carriage," etc., begin to be appropriated at this age. Preferring certain spots in exclusion to others apparently as comfortable is a wide spread animal trait. This is true of nearly all domestic animals. The third group—13 to 18 months—introduces for the first time articles of motion, *e. g.*, go-cart, buggy, toy engines, etc., and articles of dress. At this age the motor-side begins its call for objects on which it may operate. In the fourth group—19 to 24 months—articles of motion are predominant. Articles used in imitation plays come in. The fifth group—25 to 36 months—shows that articles used in imitation plays are most frequently claimed and owned. The articles appropriated in the last group—37 to 72 months—are of a miscellaneous character. The most interesting and

significant fact presented is the effort of the child to hide whatever possessed.

The sense of ownership finds expression in children not able to talk in those "expressive" movements of body—of the hands—reaching and clasping; of the feet kicking; of the face—anger, pleasure, satisfaction; by crying, laughing, and other characteristic sounds common to infants.

These are the objective facts noted by the observers. Here and there we get hints of the child's attitude—consciously and unconsciously—toward property. The following facts may be noted. (1) In every case, from the youngest to the oldest, it was necessary that the child have the article entirely to itself; communism was out of the question. Extreme selfishness seems to be the rule; (2) generally the child does not lay claim to an object until it sees the object in the possession of another, or when some one else tries to take the article—in fact, at this point, the sense of ownership first gives itself definite objective expression; (3) The extreme forms of isolation and exclusion—two fundamental elements in the sense of ownership, crop out in the child hiding its possessions. I have found no case of hiding articles under four years of age; (4) The child may have a fairly clear idea of possessing an article himself, while not conceiving the same feelings to be present in any other child.

Here the question may be raised: At what age does the child have a clear notion of the concept *mine*? It is believed that the child under three years has an inadequate knowledge of his own body and of self.<sup>1</sup> Up to the second year it does not use *me* or *mine*, and very probably then does not understand their significance.<sup>2</sup> To illustrate this, Dr. Ladd one day asked a little girl what the *I* was that loved papa. She seemed not to understand for a minute, then she said: "O, now I know, it is my arms, because I hug him with them, and my lips because I kiss him with them."<sup>3</sup> Sully<sup>4</sup> says: "In this crude idea of self before the meaning of the "I" becomes clear, we have to suppose that the child does not fully realize the opposition of self to not-self, but rather tends to regard himself as a kind of thing after the analogy of other objects. In section II, it was maintained that it was impossible for the savage to have a clear conception of ownership until he had learned the boundaries of his ego, to distinguish self from not-self, and the same holds true of the child. No being can conceive of an article

<sup>1</sup>Hall, G. Stanley: Early Sense of Self. *Am. Jour. of Psy.*, 1898.

<sup>2</sup>Moore, K. C.: Mental Development of the Child. *Psy. Rev. Supp.*, p. 141.

<sup>3</sup>Ladd: Descriptive and Experimental Psychology.

<sup>4</sup>Sully: Human Mind. Vol. I, p. 476.

belonging to himself, if that self is not to some extent known. The conscious concept of property and of self thus seems to develop *pari passu*.

In answer to rubric I. (b) [see syllabus] received 188 answers—88 females, 100 males, ages 1 to 14 years. The following articles were collected by 188 children: Money, stones, blocks, cards, stamps, drawings of engines, marbles, bottles, handkerchiefs, spools, pipes, pieces of dress goods, nails, leaves, nuts, buttons, strings, insects, butterflies, beetles, pencils, frogs, carpenter's tools, garden utensils, flowers, dishes, broken china, shells, dolls, ribbon strings, pins, acorns, tin articles, paper dolls, old kid gloves, balls, fans, corks, salt cellars, ink bottles, hats, cigar pictures, colored glass, seeds, toy boats, knives, keys, boxes, colored rags, sleds, wagons.

The articles that the child collects, as previously shown, depend on the environment and home training. The child inherits only the activity to collect. To have something, to own something is needed to fill up an empty gap in the child's life. The article may be utterly useless: a heap of stones, pieces of wood, leaves, old gloves, rotten strings,—things for which the child itself could not invent a reason for collecting. The treatment of the collection is probably the best evidence as to the motive for collecting. It appears that the majority of children from 2½ to 6 years old either neglect their collections as fast as made, or hide them, taking a peep at them from time to time, but never making any use of them. This period of collecting might be termed a purely instinctive one. It would be worth some one's time to gather a wide range of data upon this one point. Our own returns (188) are inadequate to warrant conclusions. From 6 to 14 the disposition of the articles is indeed varied. They are hidden or forgotten; traded for others; kept to show playmates; kept through imitation and emulation, in order to get more than some one or any one else; sold for money; kept to play with; kept as ornaments—as beautiful shells, flowers, etc.; and kept to work with. The motives prompting and controlling the collecting activities of the child appear then to be, instinctive,<sup>1</sup> imitative, emulative, utilitarian, love of display, and love of the beautiful.

The most wide spread and interesting phenomenon connected with collecting is hiding the articles. The child takes a keen pleasure in having things that it may "use and abuse," hidden in some place which no one else knows about. Displaying them to friends occasionally is a pleasureable act, but the pleas-

<sup>1</sup> Kleptomania is an abnormal instance of this instinct. The subject cannot control his impulse to take any article he sees. He does not care for it afterward particularly. He must needs take it to satisfy his impulse.

ure is much sweeter if the articles are produced from quarters known only to itself. The love of displaying possessions, thereby attracting attention and eliciting praise, is characteristic of very young children. Sully<sup>1</sup> thinks love of approbation in the child is one way in which self-consciousness is developed. The following cases are typical of a number received on this point:

M., 4 years. Collected a large number of uncolored pictures. After gathering a box full he painted them, pasted them in a box and showed them to every one who came in.

F., 7 years, made a large collection of shells which she kept on a stand in the sitting-room. She was very fond of showing them, but did not want any one else to touch them.

M., 5 years, collects all the spools he can get, makes no use of them, but when his mother has company, he brings them out to show.

The collecting of money among children is common. This perhaps is due as much to suggestion as from any primary realization on the part of the child of the value of money. Collecting money is common to all ages from 1 to 14. The per cent. of boys is larger than that of girls in 135 cases.

M., 5 years. Saves every cent he can get which he keeps in a bank and if he wants any money to buy candy or anything with, he will ask some one else for money.

M., 3 years, would collect all the pennies he could get and hide them, where he thought no one would find them.

M., 3 years, asked every one who came to the house for money. If they gave him a silver piece, his eyes would sparkle and he would say—"That is worth something," but if given a penny, he would look at it and say—"Not worth much." Both, however, he would put away and not spend.

M., 2 years. My brother began to collect money when about 2 years old. Would ask his father for money and do things to earn money. Would not spend a cent, but continually tried to get more.

It appears that money is not collected with an idea of its purchasing power, but rather as something desirable to hoard, something not to use, but to save. We do not, however, put much faith in money collecting and saving as an activity reflecting a "money sense," for getting money is a thing which parents are constantly suggesting and encouraging in their children.<sup>2</sup>

Interesting in this connection are the money superstitions current among children.

"I remember two superstitions about money. One was a pot of gold at the end of the rainbow, and the other, if a piece of down from milkweed came to you and you caught it and told it to bring you twenty-five cents it would surely do so."

<sup>1</sup>Sully: *Human Mind*. Vol. II, p. 101.

<sup>2</sup>For further study of money ideas in children, see article "Money Sense in Children," by Mr. Monroe. *Ped. Sem.*, Vol. VI, p. 153.

"I had heard about finding money in chimneys that were old."

"I never had any superstitions about money only 'The more you spend, the more you get.'"

"Whenever I found a cent, I often passed the place again and always looked to see if there was any more there."

"I had a superstition about money and that was I thought when there were bubbles on the coffee, if it was a large circle I was surely going to get 50 cents or a dollar—that is, if I could drink it without separating it—and if it was smaller, I was going to get a less amount of money."

"If a number of names beginning with the letter *m* were placed under a mossy stone and left there a week, you would find money at the expiration of that time."

"Very often I would make a hundred marks on a paper, each representing a white horse I had seen. I would then place it under a stone and expect to find money within a certain number of days."

"One superstition I had was if a person had white specks on the finger nails, one would be rich. Another, that if you had long hair on your wrist, you would be rich."

"If the palm of the left hand is itchy you will receive money."

"If you dream of counting your money, it is a sign of acquiring wealth."

"If you found any money and did not keep it, you would not have good luck."

"I had great faith in 'find a black tin, find a dollar.'"

"I thought if I got money on New Year's Day that I would get money every day in the year."

"One very common superstition was the saying 'money' three times, every time we saw a star fall."

"If we ever found a horse shoe with any nails in it, we were to obtain or receive a hundred dollars for each one. To find a pin with the head point toward you was thought to be a sign of increase in finances."

"We would go around and ask each person to bow his head and when we got a hundred crosses on a paper, each cross representing a bow, we would put it in the ground and would expect to find money in its place after three days."

"One thing impressed upon me very much as a child was that my arm being so long was the sign of riches. I knew also that the finding of silver money was a warning of coming riches."

"The only superstition I had about money was that some day I would be rich because my two front teeth were separated quite a little, and I was told that was a sign."

We asked in rubric II (a) for a description of a child who wants to own everything; who steals, begs, and cheats to acquire property. 406 cases are described—262 males, 144 females, ages from 1 year to 17 years.

Nearly every return gave an instance of a child who wished to own property far in excess of his wants or his ability to use the same aright. And over 80% of the 406 cases described a child who would beg, cheat, or steal to get the coveted article. Value did not seem to be taken into account. They were not regarded by the observers as peculiar or exceptional children. They would seem to be anybody's children; the average child. The following are typical cases.

M., 4 years, wishes to own everything he lays his eyes on—cards, stamps, bottles, pictures, etc.; he steals and begs and uses various schemes to get what he fancies. Makes no particular use of them, just wishes to keep them.

M., 5 years, is fond of slate pencils; often steals pupils' slate pencils when they are not in their seats. When questioned by his teacher how the pencils got into his pockets, he answered: "They must fall in my pocket."

M., 5. "Steals hammers and nails from the shop. Took empty dinner pails that men had left in the barn. Will ask for food when he is not hungry, and will store it away. Tried to steal a wheelbarrow, but it proved too heavy for him to move."

F., 8, bought a dress which she charged to her grandmother. Then took it to the dressmaker's and ordered it made up, but she never went after it. Entered another store and ordered two handsome pictures sent home. She went to a milliner's and selected two hats and ordered them trimmed, but never went for them. All these things she charged to her grandmother. Family suspected brain trouble, so sent her to a home for feeble minded. They, however, claimed there was nothing the matter with the child's brain, but that in fact she was a particularly bright child."

M., 5 years, frequents our house when we are eating. He will say, "What is that? I wish I had some. We never have that at our house, but it looks good."

M., 8. "Always getting things by begging, cheating and stealing. Tells his mother that they were given to him. He begs things for the church and keeps them for himself. He tells the neighbors' servants that such a boy sent him for his foot-ball, and then runs home with it."

Pedagogical inferences and suggestions are in the main patent. In some schools pedagogy is already plying her tools to this never failing ore supply. We venture the suggestion that collecting may advantageously be connected with nature study, geography, art, etc., making what might be a laborious task coincide with a fundamental desire. The child who makes collections of insects, birds' eggs, leaves or flowers, translates the beauties of nature into terms of self. They become thus a part of him, and nature is brought nearer. Emulation and rivalry in collecting would help to make the study more easy.<sup>1</sup> Another fact of not a little value is the habit of neatness, arranging by order, giving an idea of system and method, which collections bring out in the child. A large per cent. of children in the returns were most particular in regard to this. The power of observation is trained in the child's always having an eye out for certain things. Furthermore the child in making collections puts his own labor in the gathering. Hence these collections represent his own self. This is why the child will consider collections of old stones, or other objects of little worth, of much more value often than their brightest and most attractive toys. His own labor has given them their value. In our

<sup>1</sup> In some schools this is carried out and with advantage.



anthropological section it was seen that the first idea of individual ownership arose in those things in which man had put his labor, his inventive genius in making. The stamp of his own personality was on them.

The writers believe that as in labor ownership was conceived, so in labor are its real sweets to be found; and that ownership in general, which does not result from labor of some kind, has an artificiality about it, though it stands for the real thing, it is not. It is this artificial notion of ownership which has created the idea that manual labor is degrading, and which, in fact but a few years back, held that all labor was degrading—beneath a gentleman.

Here lies the true value of manual training in our schools. That the child may learn how much more valuable is the article, which he had made with his own hands by his own labor. It gives a knowledge from whence the sweetness of possession derives its source. The technique is of practical use, the learning how is valuable; but much more valuable is it for the child to learn the divinity of labor. No one who has worked with hammer and saw, and learned how rich in pleasure is the possession of an article derived from hard labor, can consider work a degradation. It puts the child in sympathy with labor and the laborer. Looked at from this point of view, no one factor has greater possibilities of developing the child than that of manual training. It puts the child in sympathy with men. He rubs in large grains of the stuff we call humanity, and for this reason it is essential that the child should be allowed to make things he wants, and also that the things made should *belong* to him.

We have found in these two rubrics, that the desire to own is one of the strongest passions in child life; that selfishness is the rule; that children steal, cheat or lie without scruple to acquire property; that they have no idea of a proprietary right. These generalizations will hold almost without exception for children under five years, for many children under ten, and in some cases even up to fifteen years of age. These things are natural in the child. Parents as a rule are continually struggling to keep them down; to teach principles of unselfishness; to teach not to lie, steal, cheat and beg; to respect the rights of others. This method may meet with more or less success. The writers of this paper are inclined, from reading over the rubrics and from personal experience, to say less. The problem is—what is the right method? Shall we hold with Calvin that the child is naturally a depraved being and that by hook or by crook we must take it out of him; or with Rousseau that by

nature the child is good and that nature wills the child to be a child before he is a man, and so "Let children be children."

Do we believe that the child recapitulates history of the race? If so we may not be surprised to find the passion for property-getting a natural one, nor that the child lies, cheats and steals to acquire it or that selfishness rules the child's actions. Selfishness is the cornerstone of the struggle for existence, deception is at its very foundation, while the acquiring of property has been the most dominant factor in the history of men and nations. These passions of the child are but the pent up forces of the greed of thousands of years. They must find expression and exercise, if *not in childhood, later*. Who knows but what our misers are not those children grown up whom fond mothers and fathers forced into giving away their playthings, into the doing of unselfish acts, in acting out a generosity which was neither felt nor understood. Not to let these activities have their play in childhood is to run great risk. It does no good to make the child perform moral acts when it does not appreciate what right and wrong mean, and to punish a child for not performing acts which his very nature compels him to do, is doing that child positive injury.

During the period of adolescence, generosity and altruism spring up naturally.<sup>1</sup> Then why try to force the budding plant into blossom? Instruct them by all means, teach them the right; but if this fails, do not punish, but let the child be selfish, let him lie and cheat, until these forces spend themselves.<sup>2</sup> Do not these experiences of the child give to man in later life a moral virility? Is not a man the stronger man for having in childhood done some of these acts? Has he not a more robust personality after them? He knows what it is to have sinned. He knows what he has to meet or stand against. These rank selfish deeds are giving the child an idea of self. The child must learn by them the idea of ownership before he can appreciate ownership in others.

The next question asked was—describe a child who persists

<sup>1</sup>Burnham, W. H.: *The Study of Adolescence, Ped. Sem.*, Vol. I, p. 176.

Hall, G. S.: *The Moral and Religious Training of Adolescence, Ped. Sem.*, Vol. V, pp. 205-206.

Lancaster, E. G.: *The Psychology and Pedagogy of Adolescence, Ped. Sem.*, Vol. III, p. 61.

<sup>2</sup>This lying, stealing and cheating in early childhood is not lying and stealing in reality at all. There is little moral element in it. Right and wrong are words which rest lightly on the child before they have learned to understand their meaning; and as Dr. Chamberlain says, the child is no criminal, no savage, is not bad in itself. It is the influence of restrictions upon these instincts which make the child bad. To the child all things are possible, good and bad. Results are what come from environment and education.

in amassing a special article; also a child with a passion to trade. (1) Very little is brought out in answer to the first of these questions besides that brought out in I:b. Cases of girls collecting were much more numerous than those of boys; articles collected came under the same general classes as made above. Trading is peculiarly a boy's trait, very few instances of girls being given. Every return described a boy who had a passion for trade. How strong this passion is among boys everyday experience teaches us.

M., 7 years. Had a knife he was very proud of, but when T. came to house with a drum H. wanted to trade the knife for the drum. When he obtained the drum he traded it for a bat, then the bat for a toy gun. He did the same way with all his possessions, even wished to trade his clothes. One day he traded his old straw hat for a marble, and was very proud of the deal.

M., 8 years. Has a great passion for trading. Everything he gets he tries to trade, not for the sake of gaining, for most of the time he loses, but just to satisfy his passion. He one time traded his hat; one warm day after school he traded his shoes. He even speaks of trading his father's house.

M., 12 years. Trades his things with his friends, and always gets the best of the bargain. He says he has a great knife at home, and praises it so that the boys are very anxious to obtain it. He lets on he does n't want to part with it, and gets the boys so crazy they are willing to give most anything for it. When he thinks he has found something better than the knife, he hesitates a little and then makes the bargain.

M., 16 years. Was known in school as the "Old Trader." Every day he had something that he wanted "to trade off." He trades chiefly in knives, watches and fancy marbles.

Any one who knows boys knows how strong is their passion to trade. It seems necessary for their development. The trading is not so much for gain or for any specific article, as it is to satisfy the desire or passion. It but emphasizes again how much property and property getting makes up of life. In the history of the race, when men began to trade, it marked the beginning of a great epoch. Dr. Chamberlain says that variations in the race commenced when man began to trade and fight. Trading is certainly a controlling element in the nature of developing the boy. It is an activity which could be used to much advantage in attracting boys to school. What interest it would rouse in the boy, bubbling over with the desire to trade and do business, if there were some system of banks or trading posts connected with the schools.<sup>1</sup> It is these things that the nature of the child goes out to that education needs to discover.

Rubric III. (1) Received 187 answers to this rubric—74 cases being females, 67 males, 42 where quarrel was between male and female, 4 sex not given, ages of children from 3 to

<sup>1</sup>School savings banks have been established in France with great success, and to some extent in England and America. Some very inter-

14 years. The quarrels were decided in five ways: (1) by some older person stepping in, 78 cases; (2) by strength or force. One child taking possession and holding it, 27 cases; (3) by children coming to some agreement as dividing, neither having article, or by one making some compensation to others, 27 cases; (4) by destruction of article either during quarrel or after it, 21 cases; (5) by one child giving in to another because of its persistent selfishness or strong will, 17 cases.

F., 2 and 3 years. K. and R. were given blocks to play with. One of them kept taking the other's blocks. Then they began to quarrel; neither one would give up her blocks. Finally they became so angry K. up and danced around the floor in her temper, while R. sat on the floor and cried. The mother heard the noise and came to the rescue. She took the blocks away from them.

M., 7 and 8 years. Walking with me over a field one day these two boys simultaneously found a watermelon. Each, of course, wanted it; it was a very small one, and not even ripe. They quarreled until one got it from the other and, taking it, threw it on the ground as much as to say, "There; you got it." Such cases as these I know many. Boys quarrel, then one gets it, and instead of keeping it, as one might suppose, he throws it away or destroys it.

F. A man who was passing along street one day threw a light-colored picture to two little girls. One of the children took possession of it, whereupon a quarrel ensued. Then S. quarreled as only children can, each claimed it and said the man meant it for her. They both cried, yet neither would part without settling the matter. Finally they decided to tear the picture in two pieces, each taking half. This was done, and by so doing the picture was spoiled, but the children were happy and the quarrel made up.

F., 6 and 7 years. Not long ago I saw two children quarreling over a piece of broken china, which they both wanted to ornament their play-house with. Each had hold of it. Finally the elder snatched it from the younger one and threw it down on flagging, breaking it into many pieces. In a very little while the combat was forgotten.

F. M., 16., had a doll which A. was sure belonged to her and she wanted it. She asked M. to give it to her, but she would not. She tried very hard for a few minutes to make M. give it to her, but finally she gave it up and let M. keep it.

In nearly all cases it was found if one child got the article that it did not seem to care about the article itself, and if the other child was not around so it could show its possession and thus tantalize other child, it cared no more about it. The object in asking this question was if possible to get some

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esting articles have been written on this subject showing the advantages of school savings banks. See, *e. g.*, the following:

Lend a Hand, 1895, Vol. XV, p. 202.

Journal of Social Science, Dec., 1888, No. XXV, Part I.

Educational Review, Vol. III, p. 72.

Annals of American Academy of Political Science, Vol. III, pp. 92-93, Vol. IV, pp. 972-974.

International Congress on Education, Vol. II, pp. 623-638.

Thiry, J. H.: School Savings Banks in the United States. New York, 1890.

light on the problem—what conception of right or privilege in possession in another has the child? How does the conception of proprietary right rise in the child? Is such a conception to be presupposed in the child as Blackstone presupposes it in early man, when he laid down the principle that first possession or first occupation was recognized as the right for an individual to own? Does the conception of proprietary right arise only through laws and restrictions imposed by a ruler, the principle laid down by Hume in the *Leviathan*; or is this conception a result of evolution, arising gradually in the child, as we attempted to show it did in man, by a gradually increasing intelligence—a closer adaptation of man to his fellow-men, making finer discriminations with the increasing complexity of his surroundings.

The results of the rubric in throwing light here were not very satisfactory. That the child at this early age has no such conception to start with is most clear, as this rubric and rubric I and II show. That out of their quarrels over articles, claimed by each, children must get some idea of a right in another to own, is clear. But the fact of parents interfering in so many cases, though this interference may teach ideas of the privileges of others, yet it vitiates the results by not letting the idea develop of itself, if it will. The cases in which children come to an agreement by themselves show that the child here recognizes some right in another; also cases where one child gives up to another more persistent. These cases, it is significant, occur among children 6 or 7 years of age and older. Younger children do not settle in this way. This seems to give support to the view we have taken in our anthropological study, that the conception of a proprietary right is a growth. One fact shown in this rubric is that in children under six, the desire for the article, to say, "I want it," is sufficient reason to the child to have or own it, and it is because of this that quarrels over ownership are so common in children. Property is also one of the first things children quarrel over.

Rubric IV. (1) Received 305 returns—133 females, 72 males, ages 4 to 15 years.

State of children in first few moments is either extreme exaltation in which impulse is to run, dance or shout; or all action seems to be inhibited; or a combination of these two much like and often approaching hysteria. After this first shock, the one idea is to have every one see it and make much of it. The child lavishes the utmost amount of care; will scarcely touch the article; will allow no one else to touch it; will not let it leave his sight. Some sentences are quoted here taken at random from different papers:—"danced around with great glee—could not speak one word—I laughed and cried at once—at

first could not say anything but just stood and looked at it—jumped upon the floor, shouting and clapping her hands—so pleased she could not stop laughing—jumped up and down, clapping her hands and screaming with delight; did nothing but jump and laugh—did not speak for five minutes—face was all smiles, eyes wide open—became bashful, ran and got behind her mother—stood as though struck dumb for one moment, then danced and fairly screamed—so overcome she could not say a word—turned pale, held it at arm's length from him and never moved or said a word, finally broke down and cried—gave one loud shout—gave a little squeal of delight—hugged and kissed it, danced round and round it (a trunk)—I stood and looked but did not touch them, I had a feeling if I did they would vanish—so excited I could not sit still—gazed at it continually—had a feeling of great joy—was so happy could hardly walk around with it (a doll)—jumped up and down with joy—sat on it (sled)—clasped and unclasped her hands—cheeks grew pink—walked around and around with it, was so surprised could not speak a word—hardly left it out of her sight—said, it made me feel so jolly when I saw it sticking out of my stocking—was afraid to touch it or go near it, and simply stood there awe struck—grew exceedingly pale, then flushed and smiled brightly, and finally burst into a passion of tears—so overjoyed, cried and forgot to thank my parents—I jumped up and down, laughed and cried in the same breath—I first cried, then I laughed, then cried again—burst into tears—hugged it, kissed it, smelled it—could not speak for joy—burst into tears and could not be comforted for some time—was afraid to touch it."

This naïve spontaneity of the child gives to us an insight into the effects of property on the mind. Things are never so real, never so large, as in childhood. As the individual grows older, his experiences have broadened so much his horizon that it takes great events or circumstances to affect him. As Höfding says, the young man on beholding for the first time some grand and beautiful spectacle in nature, as a scene in the Alps, feels his soul swell up within him, his personality expands, embracing it all, the whole aspect of the world and life seems changed and new, while the man who has looked on the same scene many times has no such feelings. He may appreciate it more, but his personality has enlarged to that extent that he is affected but little. This is why in studying men, the difficulty of finding the things which affect mind is so difficult; not so in the child.

So it is we see that these spontaneous reactions of the child on receiving some long desired article give evidence of not a little value in respect to the large part that ownership plays in

widening the scope of the mind and in enlarging self and self feelings.

Rubric V.<sup>1</sup> To the first part of this rubric, received 150 answers—74 females, 39 males, 37 sex not given, ages 3 to 18 years. Average age about 8 years.

140 of 150 cases show that children take much better care of their own property than that of another, that children are careful of their own possessions. Only 10 cases where owning property made less careful, these were cases of children very young.<sup>2</sup> 47 cases or 31.3% of 150 cases show that children

<sup>2</sup>Six out of 10 only had ages given; four of these were four years of age or younger.

not only are careful of their own possessions, but after six years of age (average 8 or 9 years) that possession of a certain article makes them more careful of other articles of the same kind belonging to others, and articles belonging to others in general.

These returns bring some very emphatic evidence to bear upon the question whether it is best for schools to furnish children with books. That they should not seem clear unless the books are given to children outright. Reading the returns of all the rubrics, and this one in particular, shows that ownership adds a dignity to the child, it expands the self and self feelings, stimulates feelings of pride. The things owned in childhood are very close to the child's inner being. As one little girl said, when a book was returned to her with pages turned down and leaves soiled, "I felt as though a part of myself had been injured." These things appear large to the child. Their life in a large part is wrapped up in the little world of their toys, dolls, wagons, and books. So when we say it is better for a child to own its books and other school appliances, we bring not only evidence of its practicability as a saving and better keeping of these things, but we urge it for higher reasons, claiming that the sense of possession fills a gap in the child's nature, adding to their dignity, self respect, expanding the feelings of self, giving an idea of one's worth and responsibility, and that these are factors of importance in the child's education; and we believe because of these very facts that the child takes more interest in their books, that they get more out of them.

M., 5 years. Tom was always careless about his books. The books were furnished by the school, and he had ruined two books since he began going to school. His teacher gave him a picture book for being regular in attendance, and he was very much pleased with it. He would not allow the other boys to look at his book or touch it unless their hands were clean. Soon after he was given this book he began to erase the pencil marks from his school book, and he said "I don't suppose teacher wants her books all dirty any more than I do."

<sup>1</sup>Topical Syllabus. II. Psychology of Ownership vs. Loss.

M., 10 years. Was always careless of tools. Left them out nights, lost them, etc. One Christmas he was given a set of tools, and he became very careful of them. Through this he was led to be careful of the tools of others.

M., 10 years. Used to destroy a great many books until he was given some of his own. He was very careful of them, and covered them so they would not get soiled.

F. Used to tear books that they gave her to look at, tear whole leaves out and fold others over and over again. But when one Christmas she received a book of her own she was just as careful of it, and afterward she never tore the leaves of books or even turned them over.

"I have observed that it makes children more careful of an object to own it."

"Children in nearly all cases manifest a desire for ownership in property of some kind. They usually exercise great care in handling their property and placing it in its proper place."

"I have noticed that children take excellent care of any article that they *feel* to be their own."

A point of not a little interest to the writers arises from the fact that 47 cases or 31.3% of 150 cases show that it is out of their own possessions by making objective those feelings of care of property, love of possession, pride in ownership, or, in other words, realizing that such feelings exist in others as well as in themselves, that respect for others' property comes, and some notion of a proprietary right obtains. In the rubric on children's quarrels among the young children—ages, 3-4-5-6, that the desire or wish for the article seemed to be a sufficient reason to them to possess it. "I want it," was enough. They could not see then why they should not have it. Among the children at this age we find little care or respect for others' property. The children of the 47 cases above were, on the average, eight or nine years old, some much younger, some older. In these cases the process was purely psychological. The child reasoned from its own desires, that they were as strong in others; that if they did not respect the possessions and property of others they could not expect others to respect theirs. This corresponds to the growth of the conception of property in the mind of primitive man.

From this study it is easily seen that the relations between childhood and property are very close and very important. They throw light not only on psychological phenomena, but also bring up questions in pedagogy of interest and value. Property is a great factor in developing the mind of the child. We see its relation here to the development of the five primary senses in early childhood; its power in teaching the child about his own self; how it feeds self consciousness, gives feelings of importance and worth, enlarges personality, develops respect for property in others by having property of one's own, quickens activity of mind. All that property has done in evolving the mind of man is repeated to some extent in the history of child-



hood. Above all property getting in childhood is of prime importance because it is *anticipatory*. Adult life is largely made of acquiring property. The child in his tenacious acquisition, his extreme selfishness, is preparing himself for this struggle. Prof. Groos<sup>1</sup> says: "I regard the instinct whose mandate in the struggle for life is, keep what you can get, as very important. Men and animals must learn not only to acquire, but also to defend and protect their property with tenacious energy."

#### SECTION IV. PROPERTY, PERSONALITY, AND FEAR.

The following answers to rubric V (latter part), VI, VIII, of the syllabus are given in the interests of the problems of this section.

Rubric V 160 returns, 126 female, 15 male; 19 sex not given. Ages 1 year to 16 years.

F., 11. With a new dress on was cold toward her companions, and not disposed to obey her parents.

M., 15. When he wears his new suit, stands straight, walks proudly, and is more polite than usual.

F., 9. Changes her general attitude as soon as she gets on a new article of clothing. She acts like a different person.

F., 7. When she puts on anything new, always acts ashamed, and tries to keep out of sight. It makes her over self-conscious.

"On wearing new garments, a feeling of pride and desire to show is almost always manifested. Have observed children on meeting to make their new garments the first topic of conversation, *i. e.* before any greeting, *e. g.*, 'I've got new shoes,' etc. Bashful children, however, will not put on new style garments, and do not like to appear in a garment until it has been worn for some time. They imagine every one looking at them. It increases their self-consciousness."—[From a professor of long experience.]

Rubric VI, 232 returns,<sup>1</sup> cases of all ages.

M., 34. "Dress, plumes, buttons, badges increase our egotism, measures our opinion of self. I have noticed this in myself and others."—[Pres. State Normal School.]

M., 32. "Usually one feels more self-confident in good clothes. Have made many a poor recital in school and in college because I was poorly dressed. One is much more assertive when well dressed. The effect is especially noticeable in women."

F., 7. Had to recite in school. Asked her mother if she could wear her new dress and ribbons. "Mamma," she said, "I'm sure I can speak better if I am dressed up."

F. (supervisor to department state normal school) says she "can teach much better in new clothes."

F., 20. "Wearing new clothes and finery does not make any difference in the treatment of my friends, still inwardly I have a great deal more confidence in myself. If I were obliged to wear an old dress to a party my whole evening's enjoyment would be spoiled, while if I

<sup>1</sup>Groos: *The Play of Animals*, p. 165.

<sup>1</sup>A very valuable group of returns. Their value justify more adequate treatment than can be given here.

could have a fine dress on I should have a grand time, should feel like suggesting new games and in general taking the lead."

M., 26. "Am better pleased with myself when well dressed. Can do more and better work."

M., 30. "When well dressed I have sometimes felt quite proud, ready to make any statement and to back it up whether it was right or wrong."

"Any new article of clothing or ornament which the child's fancy or experience associates with certain characteristics tends to raise or lower the child to the sensations and actions in keeping with these characteristics, affecting accordingly its self-confidence, self-assertion and personality. Children are unusually quick to catch the spirit, as it were, of their apparel, especially if it is new. With children the apparel is something of a moulding influence while with the adult it is more an expression of personality, though in both it is the consciousness of what the apparel speaks to others for self that helps or hinders. In my own experience it is difficult to feel a full measure of self-respect and the self I would be when I am conscious that my apparel is not appropriate on the occasion."

The following phrases occurred most frequently in the returns, as descriptive of the effects of dress. "Gives a dignified bearing," "forgot my timidity," "increased my self-respect," "can never act natural in new clothes," "feel increased in size," "feel in better state of mind," "felt older," "makes me awkward, bashful and shy," "increased self-confidence and importance."

Rubric VIII. 229 returns descriptive of the effect of sudden and unexpected increase or loss in property, and the loss of relatives and friends.

"A gentleman in good circumstances, greatly loved by the community, came into possession of much property. He forgot his old friends and became idle and dissipated."

M., 60. "Inherited a small (to him large) fortune. The first thing he did was to tell all his friends and invite them to a supper. Before this he had been rather a quiet man and not given to pushing himself into anything. Now, however, he was heard from in most enterprises."

M., 45. "Came suddenly into possession of a great deal of money. He became very disagreeable socially, and was considered mean in business, his family was about as bad off as before, for his new wealth made him stingy."

M., 30. "Became suddenly rich by the death of a relative. His first act was to invite his friends to a champagne dinner, and the next day buy a fast running horse. All that he seemed to care for was a good time and have all about him happy."

F. "This young woman was quite poor; married a young business man, who took her to a nice new home which he had built. The change made her proud, slighted her friends and relatives and became generally disliked. Age improved her manner."

F., 26. "of good ancestry but very poor, married a rich man. She at once dressed extravagantly, entertained lavishly, is generous to society and friends, heads charity lists with large sums of money. Men say her husband's financial ruin is simply a question of a few years. She flies from one excitement to another; before her marriage her life was quiet and uneventful."

"This young man always had a hard time to get along in life. At

the age of 19 he inherited a vast fortune from an uncle. The night after he heard of his fortune he gave a grand dinner party to his poorer friends, and did all he could to make them happy. He afterwards did much for the poor, and was blest by all who knew him."

F., 25, "father very wealthy, she was greatly admired in all the social circles—she gave parties, teas, etc., to which nearly every one in the small town in which she lived was invited. At the death of her father, it was found that the estate was completely involved; that she and her mother owned nothing. She committed suicide in a few days."

"This man, when he lost his money, tried to avoid meeting his friends and did not like to be spoken to."

[Many cases of this nature.]

"When my favorite uncle died I remember that, at first, the feeling of resistance was uppermost in my mind. I did not think he *could* be dead, he looked so calm and peaceful, just as if he were asleep, but when the fact did strike me, it seemed as if something had gone out of my life, as if there was something lacking in everything about me."

"My first feeling at the sudden loss of a friend or relative is one of numbness. I cannot realize the loss all at once, and it does not seem to have really happened."

The changes in, and fluctuations of, personality under the stimulus of property are neither peculiar or exceptional psychoses, that appear only under the very best test conditions; they belong to the common stock of every-day experience. We therefore appeal to this common wealth of experience both for data and for justification of what follows. The observations recorded above are merely introductory and suggestive.

We have seen that the child lays claim earliest to those things that satisfy its wants in the sphere of instinct and the senses. What the child does in this instinctive and natural way, the adult strives to do through the myriad devices of the intellect, but the aim is the same, *i. e.*, to satisfy wants and enlarge the *pleasure field*. Property, then, is an instrument to avert pain and procure pleasure. Considered psychologically, property is anything which procures pleasure and satisfaction to the individual, and anything is a loss that induces want and pain. In this sense, a beautiful painting, a landscape, a gorgeous sunset is property to any beholder, while the *possession* of a pair of boils is a decided loss, although the former may vanish within a few seconds, and the latter remain six weeks.

The manifold wants of dress come next after those of physical hunger and thirst. Prof. James observes: "There are few of us who, if asked to choose between having a beautiful body clad in raiment perpetually shabby and unclean, and having an ugly and blemished form always spotlessly attired, would not hesitate a moment before making a decisive reply."<sup>1</sup> Objectively, our clothes argue,—persuade, or repel; command and talk for us. They project and partially represent the social

<sup>1</sup>James, William: Psychology, Vol. I, p. 292.

self. They are our envoys extraordinary. Subjectively, good clothes enlarge the pleasure field and increase the feelings of size, confidence, egoism, self-consciousness, courage, etc. The self-feelings among children and youth may be so intensified thereby as to create disturbances in their social strata. Lotze emphasized the fact that clothes aroused the feelings of physical extension, and that one's personality was enlarged by them through our bodily parts being<sup>1</sup> enlarged as to sensation in this or that direction by the articles attached. May not this expansive, self-assertive effect of dress on personality account for the custom of warriors of all ages entering battle decked out in rich attire—with blazoned shields, glittering steel, waving plumes, and bright raiment? The slang word "fierce" is attributed to one apparelled in a gorgeous costume.

The property value of one's name deserves the space of a paragraph. When Shakespeare said "what's in a name?" he propounded a question of not a little psychological interest. A man's name is a possession which is closely assimilated with his ego. As has been said "the name has grown layer by layer." It has grown with the ego and the man. It would be an interesting study to learn from married women their feelings on losing the name with which they had grown up and coming into possession of a new one. The writer [France] finds on limited inquiry that there are very peculiar feelings of the self having lost a part of itself, of almost shame on writing or giving the new name, and a lack of at homeness with one's self.

Prof. Sanford has defined personality as "the sum total of all the reactions that can be got from an individual at any one moment." A study of the *first reactions* of individuals who have come *suddenly* and *unexpectedly* into the possession of a large fortune; and of those who have sustained great and sudden losses, would show, perhaps, the most fundamental effect of material property on the ego. The first reactions under such conditions are most likely to be the instinctive, unconscious, flashing out of the real naked ego before the intellect can get her inhibiting machinery into working order.

Of the 229 cases on this topic (Rubric VIII) 60 describe the behavior of persons made suddenly rich; 51, persons meeting with sudden loss; and 118 are descriptive of feelings at the sudden loss of a relative, friend; etc. 10% of the 60 cases are described as continuing in their ordinary affairs unchanged. They went about in the even tenor of their ways as though nothing had happened; 8% immediately turned spendthrifts, and prodigals. They seemed pleasure-intoxicated, bent on giving the passions the widest possible amplitude. Few of these

<sup>1</sup> Lotze, Hermann: *Microcosmos*, Eng. Transl., Vol. I, p. 592.

cases ever face about and settle down to business; 20% at once conceived some generous deed,—“gathered their poor friends in for a dinner,”—headed some humane and philanthropic movement, “began to help a poor boy to prepare for the ministry.” They are often described as loving every body, even becoming good to animals; 38 per cent. are described as haughty, proud, arrogant, forgetting and “cutting” their old friends, domineering, harsh and cruel to servants, unsociable; some turn out misers. It must be stated, however, that some of this portion of the returns are seriously damaged by the evident presence of the “green-eyed monster” which, of itself, is an interesting property psychosis. There seems to be greater uniformity of behavior among those sustaining sudden loss. The majority have little to say, they avoid old friends, seek seclusion, and maintain a dogged silence to the world. They are often found in deep study, overheard talking to themselves. Some commit suicide. And more than we are aware of spend their last days in an insane asylum. Of course some vigorous and well poised souls begin cheerfully over again.

Disregarding a few exceptional cases, with the knowledge of new possessions personality sallies forth with the altruistic and the whole host of self-feelings wonderfully intensified. At the news of a wrecked fortune personality is timid, silent, evades society like the peafowl with lost plumage, and is at times seized with morbid fears. Wherefore does property have such transforming power on the ego? Why these cataclysms in the nature and disposition of man at an increase or decrease of things owned?

If we view conscious personality subjectively, we find that it is not a constant entity but rather a concensus of those things present at any time in the stream of consciousness.<sup>1</sup> The constituent elements in the mosaic of personality are what interest us here. What are they in the main? We have observed repeatedly that personality grows in proportion as the things one recognizes as his own increase, and that it shrinks, that much of it becomes as nothing, as the things once owned are swept away. Hobbes says property is grounded internally or psychologically in the consciously apprehended capacities and requirements of human personality.<sup>2</sup> Jhering, in his “Struggle After Law,”<sup>3</sup> says: “In making the object my own I stamped it with my own person: whoever attacks it attacks me, the blow struck it strikes me, for I am present in it.” Is not this the answer to our query? The recognition of things

<sup>1</sup>James, W.: *Psychology*, Vol. I, Chapter X; Ribot: *Diseases of Personality*; Binet: *Alterations of Personality*.

<sup>2</sup>See “Theories of Property,” *Pol. Sci. Quar.*, Vol. I, by Prof. Newcomb.

<sup>3</sup>*Am. Ed.*, p. 55.

owned by me as mine is the material that makes up much of my personality; and the concept *mine* is the cement to the entire mosaic mass constituting the ego. The attitude of monks, nuns and hermits towards property is an illustration in point. The one aim of their lives is to subjugate self, annihilate their *own* personality in order that they may take on the likeness of another. To do this they dispossess themselves of everything, wear the plainest clothes, often even expel their own ideas and thoughts. Most convents and monasteries forbid their inmates to own anything.

Another illustration showing that property is the very backbone of personality is seen in general paresis. Here, under the processes of devolution, under reversionary conditions, the one great delusion present is that of vast wealth; the idea of ownership stands out in the mind in relief amidst the crumbling and fading away of all other psychoses. Again, the prospect of great wealth, a promising scheme whereby a fabulous fortune is to be realized, *e. g.*, the South Sea Island project, the scheme for extracting gold from sea water, a trip to the Klondike, will take away the good sense, mother-wit and judgment of many people. Under these conditions their credulity runs riot; any device, however absurd, is wholly adequate to the end in their eyes. In fact they will not attend to details, will refuse to consider ways and means, so blinded have they become in dreaming over the fabulous returns at the goal. When we consider that no one factor is so intimately associated with all of life's activities as property getting; that property has been and is the one great sessilizing agency for the human race, converting nomads to husbandmen; that mind and civilization have developed through it and by it, it is no wonder that shattered and wrecked fortunes should be accompanied by dismembered and tottering personalities.

Probably the most general and most urgent motive prompting the acquisition of property in its many forms is fear. The absurd and outlandish practices of the miser will serve us as an introduction to this phase of the subject. The items here recorded are taken from 104 returns to rubric X.

M., 32. Crabbed, dishonest, had but few friends. Had one child, a son, to whom he willed a large pile of almanacs. The son was on the point of burning them when he happened to look in an almanac and found twenty dollar bills between the leaves. By looking carefully through the file he found a large sum.

M., 80. Lives by himself in a little old red house. Works very hard, eats but little. Goes to bed early in order to save oil and coal, although he has plenty of both. Hides his money in many odd places: stove-pipe, under the carpet, buries it in the cellar. He was not always this way; became so since the death of his wife about four years ago.

F., 60, lived in a garret, thought to be very poor. Ate the poorest

food, finally died of starvation. When her room was searched four bank books were found and deeds of a great deal of property—the whole amounted to about half a million dollars.

F., 63, lived alone, dressed poorly, neighbors thought her poor. She aroused their sympathy until they practically supported her. She was found dead. While disposing of her effects to defray funeral expenses \$3,000 was found stuffed in an old clock.

M., 70, lives in a dirty old hut in the woods. He goes ragged, dirty, hair and beard greasy and unkempt. He goes hungry all the time. He is very wealthy. Keeps a portion of his money buried underneath one of the boards in the floor of his hut. When his wife died (she was as miserly as he), by her request he buried her himself, so as to save the expense of a funeral. [Several cases of this sort.]

M., 65. "Worth thousands of dollars. Lean, sallow man, is never seen in any kind of society, never helps the poor, churches, hospitals or asylums. Disappointment in love lead him to be so miserly."

#### Rubric VIII. Last Part.

M., 33. "Have always felt that it would be such a disgrace to be buried at public expense."

M., 39. I have often been haunted with the fear of poverty and dying in want. It is a most distressing and depressing state of mind.

F. When about 15 I had melancholy fears of poverty and loss of friends. An entrance in a diary on one of my birthdays at this time has afforded much merriment. I opined that at thirty I might be "alone, an orphan and a beggar."

Carlyle declared that the hell English people fear most is poverty. We think the declaration might as well be made to include the rest of the human race, for in matters so fundamental there is slight room for differences.

Poverty is Pain. It always has been and is ever enlarging the pain field. Its areas include ignorance, bondage, human slavery, cruelty and misery in its divers forms. Fear is the dread of pain or of the possibilities of pain. The fear of poverty arises in anticipation or dread of the pain that it may cause. The fear is as deep seated as the suffering thereby has been great. There is no cause for wonder at those nameless feelings of dread that steal over one at the thought of being left defenceless in the world without a cent, of being suddenly cut off from the pleasures that delight us and of being assimilated with outcasts, charges, and irresponsibles, of spending one's last days in the poor house, of being buried at public expense and taking one's eternal rest in the potter's field. All those feelings of distrust of man for man in the business world, the always more or less strained relations between creditor and debtor, and the constant over-anxiety about the safe keeping of property, are further expressions of the property-fear-psychosis. It crops out among those people who put their money out at small interest in some safe place instead of putting it where pleasure and benefit in a large revenue could be derived. The extreme form of this fear lead some persons to hide their valuables in ridiculous and out-of-way places, *e. g.*, in the hems of a

garment, in a bundle of carpet rags, underneath a stone, in hair comings, etc. Every one has seen or heard many incidents of this nature. One usually ascribes the hiding of money to misers, which is usually the case. But all misers do not hide money, nor are all money-hiders misers. Fear and distrust may cause even a liberal man to keep his money in his own peculiar way. Money-hiding, however, is one of the things of minor interest about the miser.

Science lacks a psycho-sociological treatment of the miser. It is true that numerous descriptions of his nature, disposition, and appearance are found in certain species of ethical literature. These descriptions attempt nothing at his origin, and are inadequate in showing his relations to society. The plan of this paper permits only a brief statement of the theories relating to his *origin* and *nature*. The subject deserves a separate monograph. The miser belongs more particularly to the climacteric and post-climacteric periods of life. He has lost interest in his species, the instinct-feelings of parenthood are dead within him, for he evades and shirks her holy ordinances. The dynamic push up of life's forces, the progress of all life is a concatenation of forces that he avoids. He steps aside when they move in his direction. He will not be caught up by them. Although the most sessilized form of the human race, his sessile apparatus is of the very crudest sort—a miserable hut or cave. He will not beautify a home. Even if given one, the marks of time soon begin to show on it. He reverses every principle of hygiene, every sentiment of home and a better part of the customs of society. Whence this anomalous sociological element? Is he a product of a morbid passion to get money, plus a morbid fear of poverty, both having become fixed ideas; or is he an individual whose nature the altruistic wand of adolescence never touched; was he truant to life's school while nature was teaching her one great lesson of self-sacrifices. Is the miser a man with a child's notion of property, *i. e.*, that property is an *end* and not a means; or may he have resulted from an enforced unselfishness and altruism in childhood, not allowing the instinct of selfish acquisition to play itself out; or may he have resulted from some mental shock, as disappointment in love,<sup>1</sup> loss of friends, thereby aborting that instinct of providing for one's children which we have shown is so fundamental in the normal individual? This latter theory appeals strongly to the writers as one which accounts, at least, for not a few misers. Sweep away from a man his friends, by some evil blow destroy his faith in his own kind, and leave him thus

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<sup>1</sup> R. L. Stevenson, in his novel *Kidnapped*, gives as the cause of David Balfour's uncle becoming such a cruel miser, disappointment in love.



without a purpose, with no one to care for — what will be the result? Silas Marner was such a man. We quote the opinion of George Eliot: "Have not men shut up in solitary imprisonment found an interest in marking the moments by straight strokes of a certain length on the wall until the growth of the sum of straight strokes, arranged in triangles, has become a mastering purpose? Do we not while away moments of inanity or fatigued waiting by repeating some trivial movement or sound until the repetition has bred a want, which is incipient habit? That will help us to understand how the love of accumulating money grows into an absorbing passion in men whose imaginations, even in the very beginning of their hoard, showed them no purpose beyond it. Marner wanted the heaps of tens to grow into a square; and every added guinea, while it was itself a satisfaction, bred a new desire. In this strange world made a riddle to him he might if he had had a less intense nature have sat a-weaving, looking toward the end of his pattern or toward the end of his web, till he forgot the riddle and everything else but his immediate sensation, but the money had come to mark off his weaving into periods, and the money not only grew, but it remained with him. He began to think it was conscious of him as his loom was, and he would on no account have exchanged these coins, which had become his familiars, for others with unknown faces. He handled them, he counted them till their form and color were like the satisfaction of a thirst to him, but it was only in the night when his work was done that he drew them out to enjoy their companionship."<sup>1</sup>

Every human being must have something in the world upon which to lavish affection and solicitude, something to which he can turn for companionship in his hour of leisure, some end in which his labor finds reward. And if through some mishap in the economy of nature, some abortion of his own instincts he be deprived of such of these as his own human kind afford, he must turn elsewhere, and that iron handed master habit may well determine that his fate be turned into a rut of money hoarding. It was the entrance of a little child into the life of Silas Marner that transformed the old crabbed miser into the tenderest of fathers. If the child had entered his life first and passed again from it, he might in turn have become the miser. Such is the "expulsive power of a new affection," but affection there must be in every breast; an end in every life. We do not attempt to choose among these several theories on account of the small number of facts in hand. To study the miser with any degree of satisfaction both his life history and that of his ancestors should be well in hand.

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<sup>1</sup> P. 19. Silas Marner by George Eliot.

## THE "CHILD TYPE."

By ALEXANDER F. CHAMBERLAIN.

There is something more than the poet's license of speech in the words of William Canton:

"In praise of little children I will say  
God first made man, then found a better way  
For woman, but his third way was the best.  
Of all created things the loveliest  
And most divine are children."

For, if we believe many of the best authorities in human biology and anthropology to-day, man, woman, and the child, represent, in the order given, Nature's farthest remove from her ideal, her greatest effort to preserve it, and her best promise of what it shall one day be.

And woman, being nearer to the child, is destined, in the years to come, more and more to shape man, somatically as well as psychically, in her image, until he becomes perfect even as she is perfect.

With the passing of accidental and incidental excrescences of civilization, ideals of war, brute strength and overweening masculinity, and the ever increasing influence of the consciousness of the teleological processes of evolution in the individual and in the race, making more strongly for the ideals cherished of woman throughout the ages, there will appear a social togetherness, which under present conditions, is seemingly impossible, and a co-operation in intellectual, moral and political life which the mere superficialities of the time cannot delay forever.

Tennyson felt, even more than he expressed, the truth of this *rapprochement* when he wrote, in "The Princess":

"Yet in the long years liker must they grow;  
The man be more of woman, she of man;  
He gain in sweetness and in moral height,  
Nor lose the wrestling thews that throw the world,  
She mental breadth, nor fail in childward care,  
Nor lose the childlike in the larger mind;  
Till at the last she set herself to man,  
Like perfect music unto noble words;  
And so these twain, upon the skirts of time,  
Sit side by side, full-summ'd in all their powers,  
Dispensing harvest, sowing the To-be,  
Self-reverent each and reverencing each,  
Distinct in individualities,

But like each other ev'n as those who love.  
 Then comes the statelier Eden back to men:  
 Then reigns the world's great bridals, chaste and calm:  
 Then springs the crowning race of human kind."

The physical and psychical facts upon which such opinions are founded may be read in Havelock Ellis' "Man and Woman"<sup>1</sup>—where the feminization (not effeminization) of the modern man is discussed and the way in which woman has led and is now "leading evolution," pointed out.

Not only is civilization "measured in terms of woman's liberties and activities," as Brinton and Mason have shown, but it is also measurable in terms of her physical influence upon man, which has been immensely favored by the development of urban life, with its facilities of locomotion and transport, and its multiplicity of occupations (most of them once confined entirely to the other sex, for woman as worker is older than man as warrior) which tend to feminize man.

As Ellis notes, the "wit" of St. Clement of Alexandria, that woman might be allowed to wear shoes because "she is a tender thing, easily hurt," is now quite *passé*, along with innumerable like arguments of the "weaker vessel" sort; not that woman has become hardened, but that man, too, "by Nature's kindly law," is now "a tender thing," and distinctions of the kind in question lack point.

The city man and the college student, who enjoy the gifted company of the man of genius,—these three are the most woman-like groups in our modern populations,—are all "much nearer to the typical woman than is the savage." In the size, contour, conformation and contents of their skulls, in the delicacy of their faces, in the finer quality and better disposition of their bones, as in many marked psychical characteristics, the normal man of to-day has advanced from the constitution of the savage in the direction of woman, and he has done so because "she represents, more nearly than man, the human type to which man is approximating." This physical feminization of man can be discerned even in the pelvic region, for "the modern man's pelvis is slowly becoming more feminine." In fact one may almost turn the Latin saying round, and declare of woman's reshaping of man *omnia quæ tetigit ornavit*.

Woman has always been the racially stronger, though she has been so often stigmatized as the individually weaker, just as the child is the individually helpless, but the racially potent. The reason why, to use Goethe's newly interpreted *dictum*, "das Ewigweibliche zieht uns hinan," why "woman leads evolution" with respect to man, is that she is nearest the child,

<sup>1</sup>Havelock Ellis. *Man and Woman: A Study of Human Secondary Sexual Characters*. London, 1894. See especially pages 390-398.

who, more even than the old Hebrew prophet dreamed, leads them both.

Woman and the child represent the most generalized forms of the human race, and Nature has kept woman nearer the child in order that, during the process of growing up, the latter might not altogether lose the fair promise with which he begins life, and that here and there a genius might be kept child-woman-like amid the mass of men who seem to approach the ape as they recede from childhood. Even among the anthropoids, the infant and the female gorilla make a mighty effort to touch the lower limits of man, from which in old age they come to be so far removed.

The women and children of all races resemble one another more than the men, the last, as they age, seeming to depart more and more from the ideal type, save those men of genius in whom by happy circumstance or favor of Nature during childhood or adolescence, the essentials of the child-type are retained and further developed, or, almost as rare, those *fortunati senes*, whose "second childhood" is not one of *retour* merely, but a perpetuation or a reflowering of the primal stock, whose glory and whose beauty dazzle us as in childhood. This true "second childhood" of the old, owing to the hurry and bustle of to-day with its youthful ambition and greed, and other noxious accompaniments of present civilization, does not, perhaps, with us, appear to such advantage as it did in the early history of culture, and as it does even now among unspoiled primitive peoples, where the old are seers, prophets, priests and counselors. There, perhaps, childhood being shorter, "old age" is really longer, though life itself be shorter. Primitive peoples seem to have known not a little of the golden age of the race, the golden age of childhood, and the golden age of old age.

We, too, however, more wisely than they, shall in future years know them all. The decline of war, which often slays the best in the land, the amelioration of the conditions of labor, hygienic improvements which concern both physical and mental growth, moral advancement, social ease and comfort, etc., are lengthening the average of human life and increasing the frequency of "green old age" as well as extending its usefulness as a factor in human development. Sometime the real "second childhood" of the individual, which the culture of centuries to come must enlarge and make use of in ways not yet imagined, may become exceedingly beneficial to the race consciously, as his first childhood has been unconsciously. For there is a divinity that shapes both the beginning and the end of life and the mutual relationship of long-lived individuals with a long-lived race,—for we must believe that the race affects the individual, no less than the individual the race,—opens wide

the path of human evolution. With our race, there is no reason why old age should be either a desert or a swamp, parched or poisoned into uselessness. As the race has lengthened human infancy, so it may also prolong the "green old age" of man, making it childlike in the highest and noblest sense. There is enough in childhood to recast old age. Then it may be, "man's general infancy," of which Browning sings, will begin. The rejuvenation of humanity which is now going on,—represented by prolonged infancy, adolescence and "green old age" means much if rightly interpreted. Age after age men have sought the "Fountain of Eternal Youth," forgetting, as the old chronicler tells us, the wiser opinion of those who held that "this fountain was to be found in no wood or valley of the world; but rather in the eyes of children and in the strong hearts of men." Like the Kingdom of Heaven, the Isle of Bimini lies within men, not without. And through the child alone both are entered upon.

The relation of the "child-type" to the "race-type" is a very interesting problem. That the child is the ideal somatic father of the man is a view that finds considerable support among anthropologists at the present time. According to Dr. Johannes Ranke, of München,<sup>1</sup> there is an ideal infant type, characterized by large head, long body, short limbs, etc., proportions common to the great majority of the children of all races, the special features which distinguish the adult individuals belonging to the various races of man being due to the retardation or to the advancement of these child-marks. The most striking analogies with the child-type are presented by the so-called "Mongolian" race (with which Ranke affiliates the Malays and the American Indians), the bodily proportions of the Australians and Negroes generally removing them to a much greater distance, while the white European races occupy a mid-position.

From this point of view certain bodily peculiarities of the Negro as compared with other races, and with the child, are not *per se* theromorphic analogies, bringing him nearer to the ape, but rather "exaggerations of the typically human forms,—relatively smaller head, longer trunk, arms, and, especially, legs,—which really carry him further along the line of upward development as indicated by the progress of the individual from childhood to adult age. Ranke even goes so far as to speak in similar terms of the black color (not present at birth, and having some analogies with brownish color in Europeans), the

<sup>1</sup>J. Ranke: Ueber das Mongolenauge als provisorische Bildung bei deutschen Kindern. Corrb. d. deutschen Ges. f. Anthr., Jahrg. XIX (1888), pp. 115-118.

prominent lips (certainly not ape-like), the marked lumbar curve, etc.—these are all exaggerations of something noticeably human, not peculiarities that link the "black" races closely with the ape. In some respects, on the other hand, certain cranial peculiarities, for example, which Virchow has noted, the "black" races tend to approach the child, or the female type. The European races, by virtue of certain peculiarities, the development of the face, the eyes, and, especially the nose, carry them as far along the really human road as do the bodily characteristics just mentioned the Negro. Judged by their larger head alone, the European races stand upon a level nearer to the child than the Negro, but the former's possession of a greater brain, together with their *rôle* in human history, seem to forbid the view that a developmentally low cranial form must always be associated with inferior abilities in general. Each race seems to possess something, or several things, typically human (often in excess), none possessing all of them. This is in accordance with the view of Sir William W. Turner, the eminent British anatomist, who holds, that no human race is so constituted, so far as the skeleton is concerned, as to place it in every respect above all others, nor does there exist any one race, whose skeletal characters are such as to place it, in all its peculiarities, below all other human races.<sup>1</sup> While, *e. g.*, the character of the skull and the pelvis in the European races remove them further from the mammifers than the Australians, Bushmen, Negroes, etc., the proportional relations of the lower limbs with the upper, of the humerus and the femur, bring the same European races nearer to the apes than are the black races generally. The Lapps and the Eskimo, who, with respect to the proportions between the lower and upper limbs, and between the humerus and the femur, are nearest to the apes of all the races of men, are, nevertheless, the furthest removed from them in the proportionate relations of the forearm and the arm, of the leg and the thigh. In the proportion between the forearm and the arm, the Fuegians would seem to be the most pithecoïd or monkey-like of men, but they are very far removed from the apes by their pelvis, which is of a very high type. The Eskimo of West Greenland,—some of this peculiarity is certainly due to their kayaking,—according to Soren Hansen, while their general physical development follows about the same laws as does that of Europeans in general, exceed in proportionate length of arm the Negroes, who are usually considered the longest-armed race on the globe, and, thereby, nearest the anthropoids.

<sup>1</sup>Sir W. W. Turner: Variability in Human Structure as displayed in Different Races of Men, with especial Reference to the Skeleton. Journ. Anat. and Physiol., Vol. XVI (1891), pp. 473-496.

Ranke's view appears to be shared somewhat by Dr. Franz Boas, who, in his excellent address on "Human Faculty as Determined by Race,"<sup>1</sup> remarks: "We find that the characteristic differences between man and ape are often more pronounced in the Negro than in the white race, and we may say, with Ranke, that many proportions of the lower races are to a higher degree human than those of the white." This statement, however, he justly qualifies by observing further that the proportions of the body do not depend entirely upon descent, but just as much upon occupation."

Havelock Ellis<sup>2</sup> also supports in general terms the thesis of Ranke: "In certain characters, however, the adult European is distinctly at the furthest remove as well from the simian and the savage as from the infantile condition; this is especially so as regards the nose, which only reaches its full development in the adult white. In some other respects, as in the amount of hair on the body, the adult European recedes both from the specifically human and from the infantile condition, and remotely approaches the ape."

The "overlapping of variations" in the diverse races of men, is, as Dr. Boas points out,<sup>3</sup> "significant in so far as it shows that the existing differences are not fundamental"—the innumerable transitions existing between race and race making it exceedingly difficult to maintain doctrines of anatomical superiority. One must remember, in this connection, that use and disuse, and the "conditions of existence" under which so-called races have lived account for much and render less necessary the assumption of original anatomical differences of the first moment. The apes, too, have departed, in the course of their development, very far from the rather human character of the infant simian. The tropical environment of the African and the temperate *milieu* of the Caucasian have also had their influence. The relativity of the whole matter is enhanced by the fact, upon which Dr. Boas, as noted above, lays stress, namely, that within a race itself changes and variations in the proportions of the body,—these really vary from race to race comparatively little,—may occur as great as those observed in the diverse races of men. Such, *e. g.*, are the differences in proportion types between soldiers and sailors, and the rapid changes noted in college students under the influence of the gymnasium and physical training. Functional causes, operating during childhood and after, result in difference of structure.

<sup>1</sup>F. Boas: Human Faculty as Determined by Race. Proc. Amer. Assoc. Adv. Sci., 1894, pp. 301-327. P. 309.

<sup>2</sup>*Loc. cit.*, p. 24.

<sup>3</sup>*Loc. cit.*, p. 308.

The anthropometric records of the war of the Rebellion showed<sup>1</sup> "that sailors had legs as long as those of the Negroes, and, correspondingly, a shorter trunk, while their arms were equally as long as those of the soldiers of the army." Dr. Frank Baker,<sup>2</sup> in his able discussion of "The Ascent of Man," observes: "Between the lowest and most brutalized laborers and the cultivated and intelligent classes there exist anatomical differences as great as those which separate the white and the Negro." And the causes operating to produce such difference have been much more potent among primitive races and in the early periods of the existence of the civilized races of man, where, as Dr. D. G. Brinton has pointed out,<sup>3</sup> many variations and abnormalities, by some authorities to atavism, and styled "theromorphisms," "simian traits," etc., are clearly due to deficient nutrition and malnutrition. Nutritional conditions account, in part at least, alike for the diminished stature in the poor districts of France, the dwarfishness of the Lapps as compared with the Finns, and a host of defects of bony structure in all parts of the skeleton. Dr. Hrdlicka,<sup>4</sup> from a comparison of the measurements of Worcester (Mass.) school children with those of children of the New York State Juvenile Asylum, as to length of trunk and of lower limbs, comes to the conclusion that "it is possible that it is in the lower extremities where lies the principal defect in the growth of the badly nourished children. As is well known, the lower limbs of the new-born infant are very short, and for some time these limbs grow proportionately more than the body. Nutritional disturbances at this period cannot be without some effect upon the part of the organism in question.

This influence of food, or lack of food, is strikingly noted by Dr. Baker,<sup>5</sup> when he says: "Savages, when ill-fed and living in unfavorable conditions, may simulate the habits of anthropoids, and this has an effect upon their physical structure, yet not on that account should we too readily accept their close relationship." Very interesting for comparison here are Nehring's<sup>6</sup> studies of the effects of "cram" and "starvation" upon the skulls of swine, in which the refining influence of good and regular food is very noticeable.

Food-conditions, doubtless, account in part for the conflicting statements of travellers concerning the physical condition and

<sup>1</sup>Dr. F. Boas: *Loc. cit.*, p. 310.

<sup>2</sup>F. Baker: *The Ascent of Man. Amer. Anthropol.*, Vol. III (1890), pp. 297-319. P. 319.

<sup>3</sup>D. G. Brinton: *Variations in the Human Skeleton and their Causes. Ibid.*, Vol. VII (1894), pp. 377-388. P. 383.

<sup>4</sup>Ann. Rep. N. Y. Juv. Asyl., 1898, App., p. 40.

<sup>5</sup>*Loc. cit.*, p. 319.

<sup>6</sup>Biol. Centralbl., Vol. VIII (1888-9), pp. 237-240.



appearance of savage peoples. Thus, the records of the French scientific expedition to Cape Horn, inform us:<sup>1</sup> "The Fuegians are not the ugly, ill-proportioned beings that travellers have represented them to be. Like most short races, they are rather thick-set, and the head appears disproportionately large. The question of nutrition has great importance in relation to their external form, and natives, who, in a state of semi-starvation, had a lean, repulsive look, acquired surprising grace and even beauty of outline after a period of good feeding. This was especially noted in the Fuegians who were taken to Paris." The difference between a "lean year" and a "fat year" is very marked, especially in tribes of limited area and resources. Primitive man, in this respect, is often twin-sufferer with the modern child of civilized parents. To the effects of good food, more sometimes even than to that of fresh air and change of environment, are to be attributed the betterment and improvement of the physical condition of children brought about by the "outing," "summer trips," "vacation colonies," etc., which, since, the initiative of Pastor Bion,<sup>2</sup> of Zürich, in 1876, have spread over all the civilized world,—in Denmark even "winter outings" have recently been instituted. The general tendency of these "outings," the length of which varies from a few days to several months, is, judging from the reports of Varrentrapp and Bion and the scattered fugitive literature of the subject, to increase the weight and refine the general physical appearance of the boys and girls more than to attempt the task of adding to their stature, although the latter is sometimes notably affected.

A quarter of a century ago Dr. Fritsch,<sup>3</sup> in his thorough-going study of the natives of South Africa, emphasized the influence of civilization upon the bodily characteristics of man, which resulted, sometimes "in but a single generation, in important modifications of the more external racial characteristics,"—differences which, according to Dr. Boas,<sup>4</sup> "are quite in accord with the differences between wild animals and domesticated animals; and we all know how far-reaching the influence of domestication may become."

Civilization, for man, means more or less regular work, with a sufficiency of reasonable food, and these are accompanied by a rapid improvement in the musculature and general fullness of body, besides such development in particular of special limbs or organs, as certain forms of labor and exercise inevitably entail. Fritsch points out that the shoulder and pelvic girdle

<sup>1</sup>Amer. Anthropol., Vol. V (1892), p. 92.

<sup>2</sup>Zum 20jährigen Bestand der Feriencolonien. Zürich, 1896.

<sup>3</sup>Die Eingeborenen Süd-Afrikas. Breslau, 1872.

<sup>4</sup>Loc. cit., p. 309.

do not among wild tribes (even with respect to individuals), as compared with racial type, reach the same degree of perfection found among those under the influence of civilization. Hartmann,<sup>1</sup> who has studied the North African tribes, confirms these opinions, and other observers have contributed their quota to the evidence which sustains the declaration of Fritsch<sup>2</sup> that "Members of aboriginal tribes in the neighborhood, and under the influence of civilization, attain the best possible development of body, particularly with respect to general rounding of form, development of musculature and skeleton, and, above all, in facial traits." Girls, especially (when of course, the evils of white society are kept from them), benefit very greatly by this contact, for, with their own people, life is hard and they develop early, and as quickly fade. The portrait of a Fingoe girl, for example, grown up as a child-nurse among the whites, shows when compared with her wild fellows, "a softer, more rounded form of face, absence of the dull, wild expression, and an unmistakable stamp of intelligence,"—changes, which, to a less extent, the portrait of a Fingoe man also exhibits. With some justice Fritsch<sup>3</sup> warns against taking for typical aborigines natives who have passed their lives in direct contact with civilization, who have been brought up from childhood in the houses of the whites, or in the missions, still more those who have grown up not in their own country but in other lands, amid similar surroundings and influences. For even upon the adult savage such influences have their effect, while upon the growing child they work unceasingly to round off the sharp corners of the body, and to light the face with the soul of a more expressive intelligence. Special forms of labor work changes also. The Fingoes (Kaffirs), *e. g.*, who carry loads through the surf at Port Elizabeth, in Cape Colony, who have grown up on the spot, have a development of the forearm and the calf of the leg often superior to that attained by the natives who have preserved their primitive character, with whom the upper arm and the thigh are the parts more strongly developed in relation to the remaining musculature.<sup>4</sup>

If we believe M. Gautlard,<sup>5</sup>—but more evidence is needed to settle the point,—since the occurrence of the revolution of 1868, when the Japanese people began in earnest their rapid acquisition of western civilization, some surprising changes in the national type have occurred. Many Japanese children born now-a-days (not *métis*) have neither the flat nose of their ances-

<sup>1</sup> Die Nigritier. Berlin, 1876.

<sup>2</sup> *Loc. cit.*, p. 125.

<sup>3</sup> *Loc. cit.*, p. 239.

<sup>4</sup> *Loc. cit.*, p. 20.

<sup>5</sup> Rev. Scientif., 1897, p. 569.

tors, nor the marked yellow tint of skin; the so-called "Mongol eye," and the prominent cheek-bones are also often absent. On the other hand, however, many children of Europeans born in Japan are said to have lost the rosy color of their skin and to have acquired the "Mongol eye." This question of the uplift of primitive peoples towards the highest type known among civilized races and the alleged reversion of civilized peoples, long resident in a given habitat, towards the type of the aborigines of the region, is one which needs careful study and investigation.

Civilization and food are powerful factors in shaping the bodily comeliness of men as they have always been. We will not say with the German philosopher, "man is what he eats," because, here as elsewhere, the inevitable *plus* enters, and man is more than he eats. And the child, above all, has been favored by progress in food-getting, food-preparing and food-assimilation,—vast is the difference between the child of cave-man and the child of the well-to-do urban resident to-day, and the difference between the adults of these two epochs is incalculably more. Mr. H. H. Bates<sup>1</sup> has pointed out what a vast influence upon humanity the invention of the culinary art has exerted, making men fit to survive, rather than improving them merely by the survival of the fittest, as is the rule among the lower animals. Indeed, by ameliorating the necessities and the difficulties of food-getting and food assimilation, and creating leisure, the art of cooking, stimulated the ideal of the beautiful in man, and caused the æsthetic arts largely to precede the industrial. Not hunger, as the Latin poet has it, but its satisfaction, was the first master of arts. The constancy, regularity and nutritiousness of the food-supply among peoples on the road to civilization has, in fact, made it possible for the child to live his childhood without growing old too soon, or losing that race-genius by virtue of which he shapes his kind. Indeed, as Morgan<sup>2</sup> intimated, the pastoral and agricultural states, which seem to lie at the basis of all the civilizations of antiquity made possible the rich development of man which followed, by providing fit and nourishing food for him during the early years of his life. But this is not true of all civilizations in the same way, those of the New World in particular. There other factors, among them the altruism-creating power of the desert, from which ancient Israel, like the old peoples of New Mexico and Arizona, and the old Peruvians, drew so much, were at work. As Prof. W. J. McGee observes,<sup>3</sup> "in desert regions,

<sup>1</sup> Amer. Anthropol., Vol. I (1888), p. 143.

<sup>2</sup> Ancient Society, N. Y., 1878. P. 25.

<sup>3</sup> Science, Jan. 14, 1898. P. 54.

the tendency of common strife against a hard physical environment is towards the development of co-operation and interaction, which simulate the altruism of civilization." Here, too, the weakness of the child gains the sustenance without which it could not survive, and without the domestication of animals which has meant so much in Aryan and Semitic civilization, other peoples have thus reached a culture that sometimes touches the best of known civilizations past or present. Nature has not been limited to any single device in her effort to provide the environment which should favor the "child-type."

The striking resemblances of children among all the races of man, seem to indicate the origin of all mankind from one primitive stock, while the remarkable physical similarities between the young human and the young simian appear likewise to demonstrate in the remoter past, a common origin of the human and the anthropoid groups. Heredity in all its forms, accidental variation, influences of cosmic and social *milieu*, natural, sexual and social selection, race-intermixture, etc., with other as yet unknown factors, besides the little understood influences of individuality and character, have had their share in the formation of those peculiarities which remove the individual adult from the type of his childhood and the various races of men one from another.

As exemplified in the so-called "higher races," while specialization and variation have been very great, the sexes, as was seen above, are now entering upon a progress by *rapprochement*, the magnitude of which may be estimated by comparing the statements of Havelock Ellis<sup>1</sup> and Dr. Marina<sup>2</sup> that the pelvis of man is becoming more like that of woman, with the declaration of Dr. Brinton:<sup>3</sup> "In spite of much that has been written about the foetal traits and undeveloped and semi-pithecoïd characteristics of the female skull and skeleton, I will challenge any anatomist to determine sex where the pelvic bones are absent." There is exaggeration here, no doubt, but much that is significant. For, if we eliminate (in comparing the city woman and the city man of to-day) all the peculiarities that are distinctly due to the fact of woman's being smaller physically than man; there is, indeed, little absolutely divergent left, save the primal sexual differences, which, however, fail to mark the skeleton as thoroughly as they do the living individual. And to some extent, a similar argument applies to the smaller races of man as compared with the excessively large products of more recent, and, perhaps, somewhat abnormal, conditions,

<sup>1</sup> *Loc. cit.*, p.

<sup>2</sup> G. Marina: *Studi Antropologici sugli Adulti*. Torino, 1897. P. 37.

<sup>3</sup> *Loc. cit.*, p. 379.

for there is something in the fact that Nature has always weighted the intellectual balance (so far as individuals within a given civilized race are concerned) in favor of the dwarfs rather than in favor of the giants. This, together with the fact that woman, "whose faculty," as Dr. Boas remarks, "is undoubtedly just as high as that of man," has had, probably for all time past, a skeleton rather smaller than that of man, must make us not lay too much stress upon the alleged growth in size and strength of our race as a whole, which has probably been an incidental, and not necessarily a permanent or significant development.<sup>1</sup> Sometimes Nature overshoots her mark a little and has to retreat gracefully.

The white European race, which has recently been the subject of an elaborate monograph by Prof. W. Z. Ripley,<sup>2</sup> is not, in all probability, one of the earliest human types. That it is really one of the latest, Dr. Boas<sup>3</sup> thinks probable from "the high degree of variability, the originally small distribution of this type, and the apparent tendency of hybrids with other races to revert to the other parental race rather than to the European race." The peculiarities of type now noticeable throughout the European area may be due, not so much to mixture of races, as Dr. Ripley holds, as to variations within the race itself. As Dr. Boas says, in criticism of Prof. Ripley's views: "In early times this race was probably slightly specialized in a number of areas, each area exhibiting a considerable degree of variability. The loss of pigmentation and change in facial form, were not equally pronounced everywhere, so that one region would be darker colored, or broader faced than another, although not by any means uniform in itself. For this reason the occurrence of blondes or of narrow-faced and elongated heads in an otherwise dark, broad-faced and short-haired person, does not necessarily prove mixture." These peculiarities may often be nothing more than "the remoter variations from the prevalent type. The most generalized form of the European race is represented by the child of white civilized peoples, and, not so closely, by the woman of those peoples. The European child itself, for the race, as we have seen, is practically a young one, stands, as Ranke suggested, in certain relations to the Mongolian type of mankind. Indeed, to use the words of Dr. Boas, we may consider it "a highly specialized form of the Mongoloid type, from which it departs principally by the peculiar development of the nose and adjoining parts of the face and by a general decrease of pigmentation." The

<sup>1</sup> *Loc. cit.*, p. 315.

<sup>2</sup> W. Z. Ripley: *The Races of Europe*. N. Y., 1899.

<sup>3</sup> *Science*, Sept. 1, 1899, p. 294.

"smile that was child-like and bland," for, which, among other things, the "heathen Chinese" has been said to be "peculiar," humorously locates the Mongolian in the company of the child. A comparative study of the Mongoloid type, physically and psychically has yet to be made. It is a significant fact, however, that many of the best ideals of the race, love of peace, toleration, respect for learning, sobriety, industry, etc., are marked characteristics of the Chinese, for example, and their nobler development has only been hindered by foreign domination, inter-tribal disputes and the ultra-practicality, which the necessities of their situation seem to have involved them in. As their culture aged they seem to have drifted away from the genial childlikeness of its beginnings. The *naïveté* of the whole people is illustrated, as Dr. Brinton<sup>1</sup> notes, by the little use they made of important discoveries: "They were acquainted as early as 121 A. D. with the power of the magnet to point to the north; but the needle was never used in navigation, but only as a toy. They manufactured powder long before the Europeans, but only to put it in fire-crackers. They invented printing with movable type in the eleventh century, but never adopted it in their printing offices. They have domesticated cattle for thousands of years, but do not milk the cows nor make butter. Paper money has been in circulation for centuries, but the scales and weight still decide the value of gold and silver, coins of these precious metals being unknown."

The Chinese represent one child-like type that has reached civilization, and, if it be true that the European child, physically, is only a specialization of the Mongoloid, the story of the latter's achievements must gain new and varied interest for us.

Half way between the Chinese and us there arose another civilization, that of Greece. Concerning the Greeks Mr. Galton,<sup>2</sup> with reckless exaggeration, however, informs us "the average ability of the Athenian race is, on the lowest possible estimate, very nearly two grades higher than our own; that is about as much as our race is above the African negro." Just as we see the childlikeness of the Chinese, so the Egyptians saw that of the Greeks. As Havelock Ellis<sup>3</sup> remarks: "'You Greeks are always children;' such was the impression given by the ancient people whom we are taught to regard as the highest type the world has reached." And the saying of the priest of Isis and Osiris was as true as the more hardly earned *dictum* of the modern scientist. Not alone the genius of the individual, but that of the race as well is childlike—the achieve-

<sup>1</sup>D. G. Brinton: *Races and Peoples*. N. Y., 1890. P. 200.

<sup>2</sup>*Hereditary Genius*. P. 331.

<sup>3</sup>*Loc. cit.*, p. 391.

ments of the great ones, and those of the great many recall the child. And the chief virtue of the civilizations of the future will be their seeking to restore and to preserve that childlikeness by admitting into culture-partnership, in the deepest and broadest sense, her, whom classic civilization failed to develop, and of whom Chinese civilization made an honored toy. Monastery and nunnery, bagnio and brothel must disappear ere the real age of enlightenment achieves its best. A sense of beauty that deifies the prostitute, such as Greece knew, a domestic *régime* that tends to dehumanize her as China knows, could never produce the highest type of civilization. Israel did more for the world than either, when, as Zangwill epigrammatically puts it, she sought and taught "the beauty of holiness rather than the holiness of beauty"—it was from Israel that the World-Child came. And the work of the child is not done yet, nor that of his surrogate, woman. In the words of Havelock Ellis:<sup>1</sup> "When we have realized the position of the child in relation to evolution we can take a clearer view as to the natural position of woman. She bears the special characteristics of humanity in a higher degree than man (as Burdach pointed out), and led evolution in the matter of hairiness (as Darwin, following Burdach pointed out), simply because she is nearer to the child. Her conservatism is thus compensated and justified by the fact that she represents more nearly than man the human type to which man is approximating."

The study of the "child-type" really includes the consideration of sex, genius, civilization in their most human and highest aspects; and how complicated the problem is, and what care is needed in its investigation, the facts noted in this brief essay amply demonstrate.

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<sup>1</sup> *Loc. cit.*, p. 392.

## NOTE ON EARLY MEMORIES.

By G. STANLEY HALL.

Most of the first fourteen years of my life were spent upon several farms in the hilly region of Western Massachusetts. This home I revisited during all vacations of my course at the preparatory school, college and professional school. Nearly every summer since, when I have been in the country, I have reverted to the region for at least a few weeks, and still retain possession of one of these old farms. Here I have given free vent to a number of fads. One summer I walked up and explored in rubber boots all the stream beds within a wide radius of Ashfield village; collected and, with expert help, labelled all the stones and rocks I could find. Another August I devoted to flowers, grasses and ferns, collecting about one hundred species of the latter alone. One season several weeks were devoted to climbing the hills, naming them, and marking directions, counting church spires, and tracing with the aid of a local antiquary nearly one hundred miles of old stone wall in town which marked the early partition of farms. Once I amused myself by tracing glacial scratches in the rocks and exploring the terminal moraines. Once, with an old lumber wagon, I drove around and asked every one I knew to let me explore his attic and thus collected about seven hundred objects: from old looms, spinning wheels and primitive plows, to calashes, shoe buckles, pewter plates, foot and bed warmers, ancient school and hymn books, home-spun frocks, pitchpipes and such other mementoes of ruder days as those with which Mr. George Sheldon has filled his most fascinating museum at Deerfield. These are now housed and catalogued in the basement of the academy building, where on Friday afternoons they yield a very modest income to the janitor who is allowed to charge ten cents to all who desire to visit the collection. Another August I questioned old people concerning local history, visited sites of the old mills, cellar holes, apple orchards, and made out nearly two dozen family trees which show the sad decadence of this sturdy old Puritan stock.

A year ago last August, however, I undertook as a vacation diversion a more or less systematic exploration of all the farms I had ever known, noting on the spot everything remembered from early boyhood. I climbed in through the windows of abandoned houses and explored them from roof to cellar in



quest of vestiges; sat alone sometimes for hours trying to recall vanished spots and to identify objects which I knew must have once been familiar. Thus during the month I noted between four and five thousand points, sometimes revisiting the same scene to observe the effects of recurrence, and from it all I gathered some general impressions of memory quite new to me, which it is the object of this article to record.

*Farm I* was where I was born and where the first two and one-half years of my life were spent. It contained about one hundred and twenty-five acres of very diversified land and although I had often driven past it) little of it was seen from the road), I had not entered the buildings in all that time, so that nearly fifty years had intervened. I was allowed by the present tenant, who had occupied it ever since we left, absolute freedom within doors and without, and spent there many hours, note book in hand, at various times. Often, as *e. g.*, while gazing eastward toward a dense swampy forest, where even yet an occasional bear or deer is killed in winter, or when coming upon cherry trees near a ledge or visiting two large rocks beside which were two old maples, a feeling that I thought to be a glint of vague familiarity was experienced. On coming to a knoll upon a vast heap of stones near trees I found myself articulating "why yes, of course, there was something like that." On coming upon a bit of woodland with many large dark stones near the house this feeling was very strong, and I was suddenly reminded of an older girl cousin who seemed somehow lacking and due there, although I have no recollection that she ever saw this farm, yet on general principles she probably had. Several experiences of this class suggest to me that association is deeper and more indelible than conscious memory. So with the rocky end of a knoll came an almost imperative association of cows being milked by a woman. The present occupant stated that the barnyard used to include that point, and I have been told that our hired man's wife used to milk. There was a very faint suggestion of a discontinued lane from this point to the pasture, which I am told did exist. The sudden smell of catnip, the gloominess of an old wall of very black stones, a deep well beneath the kitchen, the abundant and peculiar moss on the ledges, were other things that brought a distinct sense of familiarity but no trace of anything like memory. A deep wild gorge to the west of the level road, although quite hidden from it; the stumps of three old maples on the east some distance from the house; the slight slope of the front yard and that of a neighbor's with a well-house, vaguely suggest reminiscence, but it is more a feeling of a strong and peculiar interest than any identification with past experience.

The only clear and distinct memory connected with this place, which I have always carried and often revived, is of a red up-right wooden spout with a wheel attached, through which I poured water, and which to my great grief was left behind when we moved. As an older boy I used to question my parents about it, but they seemed to have forgotten what it was. I rummaged the attic and shed, and finally found two red water spouts fastened together to which an old reel wheel had been nailed, thus triumphantly vindicating my memory.

Thus out of all the very many objects and incidents that were impressed upon a child's mind during the first two and one-half years of his life, almost nothing was definitely recalled. The inside of the house which was changed but little; a few vestiges of old furniture in the attic which we were said to have left; the long shed entirely unchanged; the barn; all these things abounding in objects of absorbing interest to childhood, time had almost completely obliterated. Yet knowing well and having experienced delusions of memory I am positive that I cannot be mistaken in the repeated sense of reminiscence upon coming upon some of the features above noted. Phrases like "why, so it was; yes, to be sure," in some cases almost came to spontaneous vocal utterance at first, while in others, sitting and gazing slowly developed this sense. It was a hazy kind of beyond-the-woods feeling or a stony-hill-side impression with an emotional tone of effort to climb it, and repeatedly with a strong desire to sit an hour or two in a spot to enjoy the rapport that I felt would come. Occasionally when I sat thinking of something very different or reading a book I had brought along, automatic side associations seemed to spring up. It was certainly not like other places, and it differed from them more than by the knowledge I had that I once lived there and any expectant tension that fact might generate. I have little doubt but that if I had met that ensemble of landscape features unexpectedly in some far country I should have been struck by some reverberations of reminiscence perhaps akin to those Plato connected with a previous state of existence. The points of contact between my mind and the past at least did not take spacial form, but were upon such general impressionistic items as the gloomy blackness of the wall, the dreadfulness of the dense spruce and hemlock woods in the east, the difficulty and perplexity of the stony and rocky places, the upward and downward slant of the small hills. The outdoor impressions were far more cogent than the barn or house or anything in them, and up and down directions of the rolling ground evoked a reaction so peculiar as to suggest that the experience of going up and down hill for a child of the age I was when that was my home left a lasting impression.

These observations at any rate have raised in my mind the query whether or not experiences of that early age distinctly tend to lapse to vague and evanescent emotions. The influences of the environment at this very formative and plastic age of rapid brain change must have been great, and I cannot but believe that my psychic organization would have been quite different had I passed this period of my life upon a prairie. It may be that remote ancestral phylogenetic influences are related to such nebulous psychoses of memory somewhat as they themselves are related to the clear, detailed, conscious impressions arising from recent experience. Indeed we may opine that such vestiges may be the forms which our experience takes just as it is fading from consciousness and sinking below its threshold into the larger unconscious life, where instinct and the heart, which from their unfathomable depths dominate so much of our lives hold their sway. Thus it is perhaps, Weissmann to the contrary notwithstanding, that the experience of the individual tends to transform the race, somatic cells to affect germ cells, so as to determine the psychic disposition of offspring. It is at any rate not impossible that hereditary vibrations are simply yet more vague and shadowy than this all but lost psychic or neural stratum of my own soul, which faint as it now is must have had a high determining value.

Perhaps an opposite theory is truer. At that stage I may have been a creature of sentiment, and sense and feeling may have been closely related. The emotional tone which colored all impressions may have been the organ of experience and there may have been no change in the psychic processes or even the nerve and brain cells, which meditated the experience of these years, but the later mentality of maturity may have simply grown over them, and the traffic of mind and life have followed these newer strata. In this case the vague impressions I had were recrudescences of baby stages of mind or what was undecayed of them, and there may have been none but a relative change in their position on the scale, if such there be, that separates reproduction from conscious individual experience.

Certain it is that I had here a rare opportunity in the very salient and permanent features unvisited during all the interval to look for conscious reminiscences. But to make the experiment absolutely conclusive I should have been brought up to believe that these years had been spent on one of two or more very different farms, each of which I should have explored to find which was the true one from those effects of expectant tension and peculiar interest which have always centered about this place, the effects of which under such circumstances have never been measured, and could not have been eliminated.

*Farm II* where I lived from two and one-half to eleven and one-half years, I have driven by perhaps a dozen times since I left it. The house was almost immediately removed, as were the trees near it, and everything was smoothed and grassed over, so that where it once stood is now an open mow-lot. All the outbuildings, including barn, shop, shed, and stable, remain almost entirely unchanged. Once or perhaps twice in the nearly forty years since we left it I have walked over the farm a little, but in my study of these places I spent a day, note book in hand, zigzagging systematically across it from end to end save perhaps in the more densely wooded parts, hardly a square rod of ground escaped observation. Of nearly eight hundred items noted I am quite sure that at least half have been in my mind in some connection since. In the case of most of the rest the faintness of the reminiscent sense tend to confirm my impression of no such intermediate revival. The most striking experience of all was on coming suddenly upon a wild rose bush in a pasture near the house, which somehow affected me profoundly and actually evoked tears, and something almost like a sob for some reason utterly unaccountable. I could not possibly recall anything definite about it except that it somehow very closely suggested my mother and brought up later the image of her looking out from the front door up the rugged pasture hill, where it stood. I fancy that it was this very bush that my automatic imagery used to associate with her singing "The Last Rose of Summer," which always seemed to me very pathetic; but, although I have racked my brain since, I can recall nothing else.

A distinct class of impressions are those which at first sight I vividly remembered with a sense of a very long interval since their last recall. Among these were, for instance, a peculiar flat white rock against which I was fond of glancing stones to see them strike fire. Another large squarish stone in a brook beneath which I caught my largest fish in a most peculiar way, and with a pin hook at that; a slight bend in an elm which otherwise I remembered very well; a rectangular stone sluice at the entrance of a little causeway; the strips of ash bark on the beams of the barn; a large knot-hole through which swallows entered it; the peculiar tan color of the boards as they approached the eaves; two large piles of stone near a stone bridge; some curiously weathered ledges; a peculiar branch in a beech tree in the woods; the shadows of the sun shining through the beeches upon ferns at a certain spot; an old tree, the roots of which diverged long before they entered the ground; a large white rock in the wall at the remotest corner of the pasture shaded by an immense beech;—oft repeated experiences, such as coming to a peculiar curve in some woodpath; a rise or fall of the ground; a hollow or a knoll; a bend in the little stream; patches

of brakes and polypods, elders and sumachs; these and other impressions like them glowed up vividly in memory. The larger features of a diversified landscape are probably the most permanent forms of all topographical memory, but here again slight elevations or depressions in the ground seemed to be almost indelible. I could never have recalled them in the sense of active recollection, but when presented to sense, I remembered them with great certainty and detail, as indeed I did many peculiar knolls in one part of the farm where these abounded, and not a few of the best holes for both fishing and swimming in the large and small brook which flowed through it. I estimate that upwards of four score individual trees in the ten or fifteen acres of woodland and in the orchard were definitely identified, as were the many groups of spruce, hemlock, willow, and white poplar. One knoll strongly suggested wintergreens, and on going to it there they were. Another damp place in the edge of the woods brought to mind jacks-in-the-pulpit some time before I got there, and there too they were, though without any sense of ever having seen them there before. Pausing at familiar spots and striving to bring up associations with their salient features rarely brought anything so vividly to mind as what was presented to sense, but there was often a feeling like the glint of partial or possible imagery as though perhaps there had been many associations which had become too felt together to be disentangled. Places near the house were, of course, best known. Those near the two roads, that nearly quartered the farm, and near the footpaths, driveways, and woodroads came next. Rocks and stones in these, and indeed everywhere, are the sheet anchors of this kind of memory, as they do not change. Special and somewhat exceptional features are what evoke and start reminiscent imagery, and when these were lacking I have sat long studying places I once knew most intimately, but have been unable to recall anything.

Another class of memories among the most vivid of all were those associated with the strong instincts of play and its incidents. Very many square rods of ground where I had mowed and raked I could recall nothing of, while another no better marked spot shone out like a star of the first magnitude, as a place where I had caught a mink, built a willow booth, slid in winter, learned to skate, pushed over my little brother, had a long fight after school with another boy; made my first effort to smoke; built a bonfire; played fox and geese in winter, etc. Over and over again this moral: that work is forgotten and things interesting remembered recurred, although this rule, if such it be, is not without important exceptions. If I remembered where I shot a crow I recall just as well where the hired man hit me with the ox whip. I remembered where I found a quarter in

the road, and remembered quite as well where a team was for some time stuck in a snowdrift near by, which I helped the men dig out. A ditch, a bit of stone wall that was built, a sugar-house, changes in the cellar, the stable, several new tools, the new sleigh, buggy, robe, harness, and scores of other such things associated more with work than with play seemed to stand out almost as vividly as the new sled, the new suits of clothes and hats, little pleasure trips, etc.

Another group of reminiscences, if such they may be called, were moods with no definite picture. A kind of open glen in the woods, for instance, recalled nothing, but gave a very extraordinary and unwonted sense of pleasure and of previousness. A big dark rock, which I must have known intimately, gave a very substantial impression of frowning stability unique in its emotional tone, and to which I seemed to owe a certain power of appreciating moral steadfastness, although my memory could only say "perhaps a rock was here." The distant sight of a group of hemlocks suggested that they were striving to conceal something, and this gave them a kind of secretive character. A large widespreading beech that stood alone brought up a unique feeling of large and benignant generosity. The angle of the woods against the sky in one place, behind which the sun used to set, evoked with much force a sense of being restrained, limited, shut out from something very much desired. On entering the woods from the open lot there was a sense of being on more solemn ground with an old feeling of awe and hush, of being shut in, of low-toned vague fear with indefinite expectancy. The note of a wood thrush very familiar there, which was heard again, never vibrated so deeply. The view of the house as it used to be, and the open lot beyond, had an almost human expression of smiling invitation that always drew me like a magnet. The noises of the brook, where it parted each side of a large stone and then paused in a deep dark spot under the willows, gave a sense of hurry and rest very pleasantly contrasted; while the brook always had strange drawing power, and kept saying "come and play with me." An old sash with small window panes, in one of which was a peculiar air bubble, instantly revived a whole series of frost pictures that I used to watch with great interest when they were very elaborate in the morning and as they gradually melted away, always beginning in the upper middle of each pane, and letting in the view without. The scenes we used to fancy and even draw in the frost, and the zest with which the rain was watched with a kind of hedonic narcosis, as it trickled in lines of broken drops against these panes, have left their marks upon my soul. I believe that I could fill a volume with descriptions of things, processes, and incidents connected with this place. The new

and striking generalization of all the study here, however, was that the physical features of this old farm had such amazing power to play upon my deeper sentiments and emotions. The buttercups, clovers, and many flowers and plants,—all had psychic qualities and definite expressions; so did the clouds, the rainbows, the rising and setting sun, the moon, the stars, particularly Orion and the Dipper, the noises of the wind, etc. Love, pity, deep dislike, fear, religious awe, aspiration, juvenile ambition, directly stimulated by the excelsior motive of hill-climbing, and every shade and color of joy and sorrow, pleasure and pain, seemed to have been brought out by the items and incidents of this environment as a skilled musician evokes all the possibilities of his instrument. I deem it fortunate to-day that I was exposed to such impressions, and hold that all the advantages of city life and of better schools would have been too dearly bought by the sacrifice of these. The country is the child's heaven, and every child ought to spend as much of his life as possible under the influences of nature; and I doubt if there has ever been a better school of infancy than the old New England farm in its best days.

Very many of the objects in this place retained the very vivid associations with the imagination which they used to have in boyhood. A dark closet with no window always seemed a little awful, because it was associated with Bluebeard, who here slew his wife amidst a lot of dead ones. A spot near an elm in the pasture, otherwise unmarked, was where the demon in the Arabian Nights escaped from the bottle. A steep acclivity in the mow land with rocks and scrub trees was Bunyan's "Hill of Difficulty," and a boggy place in the cowpath was the "Slough of Despond." Moses lay amid the bulrushes behind the willows just below the dam. Understanding that an altar was a large pile of stones, I pictured Abraham about to slay Isaac near one in the east lot, and no experience of my real life is more vividly associated with that spot. Not seeing very many pictures, I made them, and the features of this farm were the scenic background and setting for many an incident and story. Everything read to me was automatically located. Miss Southworth's stories, which I conned furtively in "The Ledger," all seemed to have been laid out on this farm, with the addition of a few castles, palaces, underground passages, dungeons, keeps, etc. In a school composition, I parodied Addison's "Temple of Fame," using local personages and events, and there it still stands in all its dazzling marble magnificence, with its spires, bright shining steps, streaming banners, minarets, massive columns, and a row of altars within, on a hill in our pasture, which in fact is drearily overgrown with mullen and brakes. The "Sleeping Beauty" was just behind a clump of

hemlocks. Under a black rock in the woods was where the gnomes went in and out from the center of the earth. My mother told me tales from Shakespeare and I built a Rosalind's bower of willow; located Prospero's rock and Caliban's den. Oberon lived out in the meadow in the summer, but could only be seen by twilight or in the morning before I got up. There was a hollow maple tree where I fancied monkeys lived, and I took pleasure in looking for them there.

After a gun was given me, I peopled all the brush and trees with small and even large game. One spot of brush was a jungle, going past which I held my weapon ready to shoot a tiger quick, if he should spring out suddenly at me. On one tree I once saw a hawk, which I fired at from an impossible distance, and toward which I always stole up for years after, hoping to find the same hawk, or if not that, an eagle, or just possible the great roc itself. This gun was perhaps the most effective stimulus of the imagination I ever had, for it peopled the whole region about with catamounts, wolves, bears, lynxes, wild cats, and a whole menagerie of larger animals; made me the hero of many a fancied but thrilling story; took me over a very much wider area of territory and helped a sort of adventurous exploring trait of mind, which I think on the whole may be favorable to originality and independence. Moreover, it gave me some knowledge of animals and their ways, prompted me to make a trunkful of stuffed and otherwise prepared collections of the meagre fauna of that region, and although it perhaps did not teach me much natural history, it gave me what was better for that stage—a deep sympathy with and interest in animals and all their ways, which now quickens my interest in the psychology of instinct. Although it aroused a passion for killing, which is anything but commendable, it may have stimulated the very strong reaction of later years, which now makes it almost impossible for me to give pain to any animal.

In another group perhaps may be placed revivals of things long since entirely vanished—an old hollow log here, a rock long ago blasted away, the details of every room in the long since demolished house, the garden, especially its more permanent features, the vanished orchard, etc. In many such cases the environment has brought up the missing thing so vividly that were it installed into objective reality just as it was, I think little correction would be needed. Yet, on the other hand, there are a number of items of vanished things which I had entirely forgotten, quite as prominent as these and as closely connected with my life, which have been furnished by my sister, but are now so well incorporated in my memory plexus that they seem to be reinstated just as securely and naturally as those images which I had preserved without aid.



Another feature was the element of personality about certain objects, which the faint traces that I am now able to recall show that I must once have been very strong. Three white stones in the surface of a bridge with no resemblance whatever to a face, always gave me the impression of being pleased, satisfied, contented, and constant. A large window in the barn was broad and smiled forth its good will upon all passers by. A tall slender young tree near the house seemed inspired with ambition to mount as high as possible and to exercise guardian and protective functions. A sharp steep hill a quarter of a mile away in front seemed to frown, threaten and repel, but an open flat which extended still further up by the brook side, invited and almost beckoned us to walk up it. A crooked tree seemed tense, dissatisfied, unhappy, and another with low branches always invited us to climb and took pleasure in having us in its limbs. When the wind blew, this tree talked to us and we parted it. The horses, sheep, cows, pigs and hens, all had individual traits and character and many of them had names I even now recall. Some were feared, others hated, and yet others loved; while some possessed only indifferent qualities. We were never alone when in their company, and there was always a relief, especially if it was a little dark, in finding them in the pasture. One whole chapter could be written upon the celestial experiences: the peculiar sunsets which invited us or suggested the Judgment Day; the storms of rain, snow and hail, with thunder; the wind with all its notes and noises in the trees and down the chimney; and especially the clouds with all their peerless schooling for the imagination. Everything conceivable almost was seen in their forms and they contributed even more than thunder to give a sense of reality above.

Some of the objects upon this farm which came home very distinctly to the mind, I believe were of things I never had directly in the focus of attention but were known in indirect thinking as automatic side activities. Often when meditating on a subject or intent upon a strong experience of pleasure or pain, I used to catch my mind at a totally irrelevant perceptive process and would almost ejaculate the word "by" the window, tree, or whatever object this latter process concerned. This was a unique and oft repeated experience, and I cannot with confidence explain the connotations of this word that spontaneously came to designate it. It was when an alien impression was injected into a train of thought and perhaps when two disparate psychoses were contemporaneously in the mind. I think the "by" meant "halloo" clock, post, or whatever it was, "you are thrusting yourself upon a train of associations where you do not belong," unless by way of a kind of punctuation or cross-association.

Retracing the same path and also carefully rethinking all that it suggested, step by step, often brought out a new crop of memories. All these from this or any other source needed but very little effort to be fixed. Indeed on reading over my note book items, I find not only little help from it, but I can generally go beyond it and add new points. Hence comes the impression that were I to spend some weeks on the old places new impressions would continue to arise. Almost everything had a mnemonic value and during how many repetitions this fecundity would continue, it is impossible to tell.

Again all the distances seemed less; the hills were smaller; the effort of walking above the woods and to other extreme points of the farm was not so great as at the age of eleven or twelve. Perhaps part of this is due to a rather robust muscular habit that has grown wonted to considerable exercise and to much longer walks, but I am inclined to think a part of it must be explained as due to a development of larger space experiences which made the whole place seem small. Eye-minded impressions have in my sedentary life grown yet faster than motive impressions. The general outlines and large relations and directions of things rarely needed reconstruction. Envisagement mainly filled in details and revived old memories. "Yes, there was a tree here, a nutting place, a cow path, blackberries, a curious stone there, this was the old door hook which it is a certain pleasure to rescue from entire forgetfulness, the same old stone wall half torn away remains." The pleasure in making these identifications was so strong as to prompt me to wish to buy back the old farm, build a study and work here; or perhaps to read, think, or even write at different places giving the mind some opportunity to wool-gather and letting reverie have a long line, partly to revel in the pleasure of revival and partly from a feeling that one could do intellectual work here with some special advantage. Do such revivals link the present and past in a sanifying, useful, or tonic way? Do they strengthen the corner stones of the mind and soul or ought these ruined memories to be left to fall away, while mental energy is devoted to more serious work in later adult years? Would the revivals of such associations not tend powerfully to correct some types of slowly supervening insanity, if the soul was sound when these impressions were first knit together? Wherein consists the surprising memories of the ups and downs of such curving ground? Is it primarily retinal as, of course, the larger features must be, or is it partly seated in the centers innervating the leg movement of running over or up and down it? Is it really advantageous to carry such permanent topographic maps on the brain, scrappy, dog-eared, blurred and

half effaced as they are, or is the fascination of these ruins the charm of decay?

On the whole I find most of my sister's memories cluster about the house, where they are detailed and minute, while my own are much fuller of the farm. On the whole I was perhaps even more surprised at what I could recall than at what I could not. Memory seems more permanent than anything else on this place, save the general features of the landscape. Wash-outs have exposed some rocks and sunk others; little forests are beginning to grow up and part of the old one is removed; man has levelled, cleared away, filled up, put up and destroyed buildings and walls, but memory remains true to its past.

Of the educational value of the inventory of my impressions of this farm, it is hard to speak. The deeper things like the discipline of toil, the pleasure of rest and recreation, the seriousness of religious experience, the communion with nature;—all these did their work and moulded the soul, but have left few pictures. Very many of the latter are concerned with items which might have been very different with little obvious change in evaluation. The memories of this period, while very numerous and distinct, may have less emotional tone than the obscure and uncertain recrudescences on *Farm I*; and yet very frequently strong impressions of father, mother, brother, and sister would return with pathetic emphasis. There was here a distinct and all pervading sense of sadness that all was gone and forever past recall; and yet, when I frequently asked myself whether on any conditions I would be put back as a child and live it over, I was able to think of no conditions on which I would consent to any such repetition. What then is the origin of this peculiarly sombre hue of the "days that are no more?" It is surely not all because we know they might have been better lived, nor is it because maturity has not still greater joys than they, nor yet again all because pleasant impressions abide and painful ones are forgotten so that blessings brighten as they take their flight. Childhood is the paradise of the race from which adult life is a fall. Childhood is far more generic in body and soul than even woman, just as she is more so than adult man. The "shades of the prison house" are the inevitable specializations necessary in becoming a member of the community, and I am quite clear in the opinion that the fascination which the memories of a happy childhood always exercise upon the mature mind is due to the dim sense that in those halcyon days we were more complete and all sided, more adequate representatives of the race. The other charm seems due to the sensuous life of childhood, which is all ear and eye, curiosity, interest, which devotes all its energies not to a bitter struggle for existence or the intellectual working over of impressions, but surrenders

itself with abandon to the impressions themselves. This and, to some extent, the next farm were my earthly paradise, and although in the current that has long so strongly impelled young rustics toward more urban centers I have wandered and fallen far, I hark back to all the old local associations in these spots with a piety that is almost filial toward the very trees and rocks.

On *Farm III* I spent a number of months each year from eight to thirteen. It comprised some four hundred acres and joined several others with which I became quite familiar, as they were owned by relatives. Of one abandoned house into which I climbed, I still preserved a distinct memory of every door and window, could have drawn the rooms and replaced most of the furniture. The interesting revivals, which I am sure could not have been in my mind for decades, were details like a peculiar door knob with a defect in it; a cross beam in the kitchen with a peculiar pattern of paper which I discovered by tearing off two later superposed wall-papers; several peculiarities about the cellar stairs; a white stone in the wall of the well; a hollow in a door step; a bullet hole in a shed; and many others of the same kind. Often I was at first uncertain about these, but they generally soon grew clear. In one room there was an almost imperative association of collective prayer, a quilting bee; in another of a baby in a cradle, a young lady and her beau sitting on a black hair sofa, but there was no trace of any reminiscent feeling, although each of these items quite likely were really experienced. Still more dim are fragmentary images of people sitting around; of some one in the morning coming out a side door, rarely opened, to pick flowers; of something exceptionally good to eat; of something else very interesting kept on the stairs; of some curious kind of an animal in the sink, etc. Of the arrangement of the rooms upstairs, where I often slept, I could recall nothing whatever.

Another once familiar but now abandoned house into which I climbed produced like this a tangled mesh-work of memories, which seemed to interfere with each other, so that when I often thought I had found a clue, it was hard to bring definite images above the threshold, but there was a vague massive feeling of reminiscence that was overpowering, full of interest toned with both pleasure and pain. Here I unexpectedly came across an old school seat and desk which I would instantly have recognized from the old school-house. A broken hearth of an old stove had a striking pattern which shone out with great vividness, and which my eyes as a boy used to be very fond of tracing out in revery, and I instantly recalled just how it stood in another house. A lot of rude abandoned sap tubs from which as a boy I used to help make maple sugar, and the general patterns and

certain individual tubs were clearly remembered. A very antique chair, bottomed and backed with woven strands of braided colored rags; an old stool which my grandfather often used in lying down; the broken part of the colored glass of the old clock; the funny snapping apparatus of an old reel; the knot which made a defect in the cheese basket; a curious red salting box; the door of a cat hole also with a curious knot in it; a blind window; a crack through the broad hearthstone; a discolored spot in the ceiling; the mark of my knife in the woodshed door; the one imperfect brick in the back of the fireplace;—these things suggested to my mind that objects, rarely and perhaps never in the exact focus of consciousness, but about which day-dreaming and absent-minded revery no doubt played a great deal, constitute a large factor of such memories. Irregular forms like knot holes and exudations of gum, especially from spruce boards, imperfections in bricks, corner stones, clapboards, unsymmetrical trees, were convenient perching points for the flitting imagination, and perhaps points *de repère* for quite elaborate structures of fancy, like the ink blotches of the psychophysic laboratory. At any rate I doubt if such objects as these were ever the centers of so concentrated attention and so much or so long continued interest with me before.

Passing to the house of *Farm III*, itself temporarily closed, but with some of the old furniture still remaining, and through every room of which I slowly went alone, note book in hand, memories crowded very thickly with the opening of every new door, and seemed almost to affect the vividness of sense impressions. The old parlor paint never looked so white, the castellated old stove, almost never used except on Thanksgiving Day, was still there; on this side lay my grandfather and here my aunt in their coffins; the old mirror with its wide mahogany frame still had the little crack in the corner, which was even better remembered than the mirror itself; the smaller long narrow one with its gilt and black frame and the gaudy flowers painted in the glass of the upper part; the red table which still showed my ink spot on it; the old daguerreotypes; the carpet; wall paper; mahogany sofa; the same old black books, Clark's Sermons, Baxter's Call, Bunyan's Holy War; the yellow boards and the maple cane-seated parlor chairs; the large-figured red carpet; the curious bulge in the post of the old mahogany stand with its two yellow drawers with their two small mahogany handles each; the big red pin-cushion built on a broken glass lamp stand—were well remembered images in this room unvisited for at least thirty years. In the sitting-room, where far more time was spent and which had been frequently revisited in the interval, I could not do as well, although I was able to jot down over seventy partial memories of scenes and events

connected with that room. Occasionally things I had first thought new, like the stone floor of the cellar, the place of the various bins and cider barrels were later remembered. Here trifling things almost flashed back, which I cannot think had been recalled for decades, such as a peculiar latch fastening; curious round-turned curtain holders; a milk stool with block and peg identified by a knot; a very old-fashioned green, black and red wagon; a large and curiously broken rock in the pasture wall; a cracked and worn-out ring in a discarded ox yoke; a four-sided razor strop, red gum in one end and the handle broken; a few square yards of very stunted little daisies back of the barn; the same old woodchuck holes almost always in the same places.

Some associations experienced very vivid revival. On entering the cellar, the first thought was of a pitcher of cider I had fallen with and broken; the next of an old apple parer; the next of a relative, I had often heard of, who long ago fell down the stairs of the old house and broke her neck; then of a musk rat I once caught at the mouth of the cellar drain; next of the peculiar flavor and look of three of my favorite apples, one of which was of almost delusive intensity; the rows of barrels of apples with a slightly purple tinge; of something very curious that once happened out doors and which I saw through the cellar window, but the very nature of which I could not recall; of another something exceptional that once stood for a long time on the east side, and of something that hung from a cellar beam at a pretty well located point, but whether a hanging shelf, cupboard, dressed pig, or a cask of home brewed beer, I could not recall, try as I would; the front window event may have been getting in potatoes or apples, clearing out the cellar, shovelling snow away to let the light in, a game, or a team driving up with company. The spacial reference was definite but my brain functions here are in a state of unrestorable ruin, for they enabled me to mark nothing but the site, where once something stood, suggesting a prepotency or rather a prepermanence of site location.

In wandering over this rocky, hilly and very diversified farm, almost every square rod of which had features all its own, my note book was rapidly filled with the flotsam and jetsam of reminiscences. Sometimes the outline of a hill or a whole perspective glowed up, but more often it was some insignificant detail or incident. There was a spring once piped to the house and later to a tub near by, annually cleaned, which I knew well, with the trodden cattle path to and about it in winter and its cooling draughts in haying; but the brightest memory was of a story I had heard that once a dead musk rat was found in it. Here was an old wall with a high shady rock cracked a foot in

the middle to which I carried the nine o'clock baiting to the half dozen men, who had already swung their scythes in unison for three hours, and who here paused fifteen minutes to drink water with vinegar, molasses and ginger and eat the thick quarters of apple pie. In one corner as a boy my grandfather had told me he saw a bear; here he caught a coon; there grew the fever plants; there was a stony acre overgrown with poison ivy which I loved to travel barefoot to show my immunity; two cellar holes rich in interests to a boy with woodchucks, squirrels, lilacs, birds' nests, apples, and a little brook running through its garden corner where I made a toy saw mill that would cut potato boards; there was a small hill thickly strewn with heavy white quartz boulders; a rocky corner famous for raspberries, another for thistles and yellow birds; a beech crowned hill where the three species of woodpecker abounded; the lightning ash tree; adder tongue knoll; lightning rock; the wintergreen and running pine places; the strange isolated rods of rank Texas blue grass; the sugar house nearly a mile from everything with all its rich associations; the many cows, calves, horses, oxen, and pigs, whose individuality is still preserved; the large pond, now a meadow, with many incidents of fishing, swimming, skating and trapping; the solitary sheep barn, which, populous as it was, needed to be visited only once a week; the half dozen barns I knew so well, and which in the winter when they were full of poultry and stock were so full of interest; the places where soap, shingles, cheese were made; the butchering and hunting incidents; the long and dreadful Sundays with my grandfather's tedious stereotyped prayer, the slowly approaching close of which was so welcome; his mighty bowl of milk; the weekly dressing of his hair, braided very elaborately up over his bald crown; my making of complete palm leaf hats; my crude skill at the accordion; flageolet, fiddle, bones, double shuffling; my soprano performance at the singing school; the details of sheep washing, shearing, breaking colts; quilting, husking, apple paring, road mending bees and raisings; the kitchen dances Thanksgiving; the Thursday evening prayer meeting in the old schoolhouse; the two dozen herbs in the garret for medicinal purposes; fence mending, road breaking, laying in wood; the stories of the winter choppers by the fireplace; the long discourses of one of them to me after I had gone to bed about the impending second coming of the Lord; several new buildings; the tearing down of an old house which I knew well till five by frequent visits, but of which nothing whatever remains except the memory of a funny old wooden latch with a string through a hole:—such lists which could be greatly extended showed me plainly that starting from such centers and working

along association tracks as I sit in my study afterwards may be quite as prolific for the period represented by this farm as reiterated personal visitations and efforts of recall made on the spot.

In meeting schoolmates of these and later days, I am often struck with illustrations of what I believe to be a general law, viz., those who finished their education at the district school retain far more vivid and detailed incidents of school life up to that period than those who go on further. In reunions of classmates of high and fitting schools, who ended their education at this stage, I find that their memories are more copious and retentive than mine. Those who stop at college, and again those who end study at the professional school without subsequent graduate or university study at home or abroad,—all illustrate the same principle, that each advanced stage of schooling tends to obliterate memories of the preceding stage.

With regard to the utility or mental hygiene of persistent efforts at revivals like the above, which may have involved something we can figure as regenerative tensions of decadent structures, it is clear to me that such interests are for the time a most salutary kind of diversion from the overwork of a year. The distraction seems wholesome, but if carried too far it may tend to diminish the vigor of later acquired interests or knowledge, and help toward the puerile tendencies often seen in senescence. Such memories as these probably linger latest amid the declining functions of extreme old age, when later attainments are first swept away. Much ought to be forgotten and the very neural structure plastically wrought over into new shape. Too great persistence of juvenile impressions may retard mental development, and too much accretion of such barnacle like traces of experience may distinctly handicap the upward push of the soul toward an ever more complete maturity. The psychology of forgetting is in the main yet to be written; perhaps the Wagnerian Parsifal, who at the dawn of manhood was able to recall almost nothing whatever of his early life, represents a more normal type than most of us, or at least than I do. If Spencer's conception of memory as instinct in the making be correct, such recollections are the crude material of higher powers, which have undergone arrest or abortion on their way. They are the unutilized remainders of our culture. Is there after all any value, when I have a distinct experience of envisagement with some of these objects with all the pleasure that attends it, in the attendant sense that I have envisaged it before?

On this farm my boyhood memories seem most distinct and numerous, although I was less familiar with it than with *Farms II* and *IV*. This was in part due to its greater size and



diversification, the larger number of persons and activities going on, but also I think in part to the fact that my stays here were intermittent, usually only a few weeks at a time, so that experiences here became less monotonous and there were more of the intensifying effects of novelty.

My note books abound in associations of taste and smell, both of which are very fecund. Caraway brings back vividly to me anywhere the soul of my experiences with the Puritan Sunday church services, and the three distinct kinds of cookies which I should instantly identify anywhere. The sight, smell and taste of catnip is a whole plexus of feeling rather than distinct memories of my aunt, mother, the white and yellow bowls, my drinking of it sitting up in bed for a cold, etc. So peppermint, spearmint, the taste of the yellow birch bark, the life everlasting, the sweet flag pods, slippery elm, the new grown raspberry stems, the so-called cheeses of the little barnyard plant, bechnuts, the medicine made of cherry twigs, the taste of certain apples known nowhere else, the smell of pennyroyal, the barnyard, the breath of cows, of corn silks, new mown hay, brakes, freshly turned sod, burnt over pastures, spruce gum, the varnish smell of the coffin shop, the odor of pines, the taste of maple sap, sage, sorrel—bring up strange uncertain poems with quaintly accented emotional tones which suggest that the latter are perhaps the accumulated mould of long past years of intellection, the felted debris of vanished experiences, the stratification of past ages of life deposited in layers. I attended to many auditory impressions to which I sought to give opportunities of revival, when they seemed peculiar to this stage of my life. The sound of the brook in certain places; the tones of the wind blowing through trees, especially pines; the song of several birds rarely heard since childhood; the whistle of the woodchuck; the drumming of the partridge; some peculiarities in the thunder at one house on a high hill; the calling of cattle of the different species; the aspirated screech of the henhawk; the bubble of the sugar pan—all these showed again the close association of sounds with feelings.

On *Farm IV*, where we moved when I was eleven and one-half years, and which was my constant home for nearly four years and my intermittent home ever since, my systematic exploration began on one of the pleasantest morning's of early autumn, with the sky a perfect blue, with a wide horizon of hills stretching from fifty to seventy miles, and some twenty-two shades of green as I thought distinguishable in the landscape. These one hundred acres I own and have a great piety toward, and I would not part with them for many times their very modest value. From

nothing I ever possessed do I derive such helpful and sanitifying influences, partly because it is land and partly because of its associations. I have plowed or mowed, made fences, ditched, harvested, or followed cattle over nearly every foot of it. When worn out with work, worry or grief, and sometimes if ill, I have gone to this farm, contact with the broad surfaces of which has never yet failed to speedily set me up. I own it, and it owns me in a sacred and unique sense. Just as now-a-days those who ride behind a horse with a coachman do not know it as did those of old who rode on it, trained it, hunted and slept with it, owed their lives perhaps to its speed, and so owned it in a unique and individual sense; so I own this farm, in a way, too, that refutes at least in one sense the argument of those who advocate public ownership of land. The rooms of death, the almost absolute stillness that now reigns here; the old awe and vague dread of the evening gloaming, which I have lately re-experienced, bring a sadness so sickly sweet that I can hardly tolerate it—and yet it all has after all a wondrous charm. What too are the psychological sources and what are the stages in the hereditary development of that strong passion to improve land, never so fervent and dominant as in the early periods of New England? Whence this rancor against forests and brush that even yet forbids us the comfort of roadside shade or the beauty of roadside growths? Very rarely in the history of the world has worse soil been cleared of brush and stones and made to yield a tolerable income and supported a more stalwart or intelligent race. To come upon a decayed stump where once was a familiar tree was a little like finding on a grave stone the name of some old acquaintance who was thought to be still alive. I climbed several old trees with the branches of which I was most intimate when a boy; got on to roofs I used to frequent; crawled under the barn floor; squeezed into the hollow trees in quest of memories.

I spent a number of hours here carefully studying and making notes on two inches square of ground chosen almost at random, counting each blade and root of each growth, distinguishing last year's dead from that of the year before; watching the ants of at least three species; slowly penetrating with a magnifying glass into the soil, noting the different forms of sand-grains and fine pebbles; tracing out the ant hole, and also coming upon a white grub; going through the shallow mould where was an angle worm, as a representative of the species through the body of which Darwin thinks this mould has often passed, to the red sandy earth beneath, and realizing what a rich book could be written on all that those two inches square contain. Up in the woods and grove I believe I could distinguish with eyes closed the poplar, pine, beech, and perhaps other trees, by

the noise of the wind through them. Perhaps I had better make my confession complete. During the days on this farm I soon gave up wearing my hat, for it shut off the view above and obstructed the sursurrus of forest music, so that the ears had a freer feeling without it. Soon the coat came off, for the heat, then the vest. The collar was hot and sweaty and was loosened. The spirit of boyhood was on me, and I suddenly preferred to carry my shoes and stockings in my hands. There must have been forty kinds of feel and tickle to the feet in the various rough and smooth rocks, sand, clay, hot and cold bits of roadway, diverse species of moss, grass and stubble, in the puddles and brook, the leaves and pine needles; so that I not only revived memories of barefoot days, but realized what an important surface of contact man loses and by how many stages he is removed from nature by shoes. As I was sure to be alone I concluded that pants only, and those rolled to the knee, would be enough and to spare. The contacts of leaves and brush and the sun that burned my back may have been intoxicating, but however it was, I finally several times enjoyed the great luxury of being in complete undress, and of feeling pricked, caressed, bitten and stung all over, reverting to savagery as I had often done as a boy by putting off civilization with all clothes and their philosophy. It was a curious experience of lightness and closeness to nature. Without the shoes one is let down half an inch in stature; the center of the gravity of the body is lowered; there is a sense of lightness; and I often had spells, sometimes I think an hour or more long and quite spontaneously, of singing, yelling, and many kinds of vocal gymnastics that sustained and perhaps intensified the peculiar kind of nature communion, philosophy and reminiscence to which I gave way on this spot, where I revelled in the rankest and most absolute freedom with a kingly sense of ruling as well as owning. Here I may mention incidentally that I am a faddist on hill-climbing, because it exercises the heart and lungs so much neglected in sedentary habits, and exercising just those movements most natural and healthy, gives a sense of overcoming and surmounting with a peculiar exhilaration on every hill top attained, with a sentiment of victory in the doing, of breadth and exultation in the end, besides enabling one to straighten out the axes of eye muscles and accommodate for a distance.

On and near this farm are many hillsides and many curious terminal moraines, almost terraced by cow paths. In one place I crossed sixteen in present use in about eighty paces, and there were many more in all the stages of disuse. In moving to or from feeding grounds, cows go in files and are marvellous engineers to avoid going up or down steep places. In and out went the scarped serration of the declivity, and right and left

wound the cow paths for perhaps one-third of a mile, occasionally deviating for young growing trees, nearly trebling the distance in order to maintain almost a water level, passing spots so precipitous that a false step might have been fatal, and altogether constituting a curious manifestation of instinct.

This farm has been so often revisited that renewals of undoubted boyhood are fewer and harder than elsewhere. A curious crack in the upper right corner of a window pane was always one of the most striking things in the house, perhaps never directly in the focus of attention as a boy, but I found I could draw a complete outline of its rather complex figure, which I used to find myself tracing hundreds of times. Every room visited now, some after a lapse of but one and others nine years or more, had a memory tone more or less distinct and all its own. The most archaic memory stratum was the attic, an old shop, a bin, and a quarry hole where rubbish had been dumped for many years. These I carefully explored, especially the latter, which I dug up layer after layer, coming upon older and older reminiscences with increasing interest and zest. Under ashes I found old carpets, broken crockery, things clean and unclean. I came upon now a bit of china, a piece of a stove, tool, bed quilt or carpet pattern, which shone out with diverse kinds of memory phosphorescence, each richly set in emotional tones and knit up with more or less complex associations or ramifications. Here I found a rather suggestive analogue of my memory strata, for things had been dumped here once a year at every house cleaning from the first, and the organization of its material was about as slight, and the stages of decay were about as marked and progressive as in my mind. In a chest in the old shop were fragments of a foot and hand warming soap stone from which irradiated an idyl of decayed memories of my mother, the stove, sleigh rides, etc.; a scrap of blue cotton reins from an old harness shone up brightly from a great depth and were very well recalled after a very long interval; some curiously notched harrow teeth; a carpenter's gauge; a rude but worn out whetstone of rare virtue; the lock of my old gun; a paper of sheep redting; two powder horns which I made and ornamented; a cake of oil meal once in high favor for calves; a much admired pair of martingales; the strangely formed iron step of a cart; the brass nibs of my little scythe; a red cherry rolling pin; a corn scraper; many broken antique cast iron wrenches; the hatchel and wire foot spool used in domestic broom making; the six-inch needle; leather hand thimbles and black thread and broom press, with the paper of gold leaf for the handles; a set of well marked wedges for splitting wood; the iron head beetle, identified by a peculiar gnarl; the battered seat of the old buggy, with its white broadcloth cushion belted in by a

patent leather strap ; two door fastenings ; part of a sled I made ; several traps for rats and woodchucks ; a jug of woodchuck oil, and a whip lash of its skin I braided ; a trowel, bullet moulds, ornamented harness, my old buzz-saw ;—most of these surely cannot have been warmed up in my brain for several decades. Other things which had the same air of resuscitation, but which had been so open that my mind has no doubt flitted over them in my annual revisitations, but which it was a great pleasure to revive more definitely, were quite a list of stones, rocks, fences, wood paths, wild grapes, cattle ; my marks in the barn and shed ; the crowded contents of old shelves and cupboards, which I carefully re-explored ; the curious painting of green and white spatter work on the floor of a room carpeted ever since we first moved into the house ; and here again suggesting a whole psychological treatise were door knobs, latches, hooks, leather hinges, wall paper, and graining, often in the foreground of memory. The curious little arch over the window of a very unfrequented room ; the strangely figured paper on the rarely used fire-board ; a knot hole in the front of a chamber door ; an unfloored place in the attic where there was perennial danger of stepping through the lath ; a long unbroken corner of a stove door ; some blue bread we ate, an aborted product of our own wheat field ; the figures on the old blue crockery ; my place at table ; several dress and bed quilt patterns ; the little red and lettered cup ; my penny banks ; a curious old firkin ;—of a good many of these I could write a brief treatise were I to characterize all the incidents and especially the feelings which they brought to mind. Here, too, in comparing my note book with a list of things my sister younger best remembers, I am yet more forcibly struck with the great superiority of a girl's memory of house, garden and yard, and a boy's of the farm.

In reviewing this memory furniture, many questions arise. As a boy I used to rake, pitch, chop, dig, and am fond of more or less of these same activities now. Do I get more rest and refreshment from these restorations of boyhood activities than I should by rowing or indulging in new games that involved different activities and laid the chief strain on different muscles? Is it a correct theory of rest and vacation to thus restore old habits or does it tend to reversion in a way that makes progressive growth harder? Again the temptation here is always great to utter abandon and absurdity, and to seek restored equilibrium from an overworked sedentary life with much brain strain in it by what might almost perhaps be called the silly or giggle cure. Does one rest any supernormally developed activities by exercising the subnormal weak ones? Is there here the material for a real new cure in a psychic restoration of the old joy of life characteristic of childhood?

Another chapter might be written on hill experiences. One distant summit I had never climbed since one day in the early teens, when I had spent a good part of a whole Sunday there alone trying to sum myself up; gauge my good and bad points till I found I had been keyed up to a kind of Jeffrey rage, and walked back and forth vowing aloud that I would overcome many real and fancied obstacles and do and be something in the world. It was resolve, vow, prayer, idealization, life plan, all in a jumble, but it was an experience that has always stood out so prominently in the memory that I found this revisitation solemn and almost sacramental. Something certainly took place in my soul then, although probably it was of less consequence than I thought for a long time afterward. My resolve to go to college, however, was clenched then and there, and that hill will always remain my Pisgah and Moriah in one.

Again a hill is a good dynamometer. Many years ago I began every summer to climb a distant hill and get back to the hotel, from which I started as speedily as possible nearly every day at five o'clock, and noted the time and have kept my record these many years. From my teens to the present time, I can walk rapidly on the first heat just about so far before my breath and legs become uncomfortable, and I want to pause. This is approximately a constant and has not varied perceptibly in all these decades. For a long stretch of hill climbing, however, the case is very different. Training decreases my time much. Beginning last year with one hour and a quarter, at the end of a month I could do the same work with about the same forcing in forty-nine minutes. I hope to keep this record yet many years, and although it will be sad when the inevitable senescent diminution occurs, the curve may have a little interest.

A wide gamut of pleasure and pain is experienced in a remarkable way. When I walk to the old place from the hotel a mile away on a bright morning, the joy of seeing everything is very intense, indeed to the point of exhilaration and almost intoxication. As I wander about all day, take my dinner alone on the hill and continue the peregrinations of the afternoon, the pleasure very steadily becomes less exquisite, pales and declines. Sunset is sad and the gloaming becomes oppressive, while as twilight darkens to early evening out of doors and night comes and I go to bed alone in the house, memories of the past grow almost insupportable, and old fears which sometimes haunted my boyhood, but have been unfelt since, of ghosts, robbers, and even of sudden death or fire, delay or even banish sleep. My euphoria cannot hold out against night and solitude here. Nowhere else have I experienced these ancient fears in any such force, although I have been no less alone.

Several times, first on a dark stormy windy night and last

on a bright moonlit one, I undertook to wander through the village graveyard, which is some distance from any house, but met with utterly undreamed of difficulties. As I approached it, there was a depressing sense of loneliness which darkened down to a strange kind of fear. I found myself tense, anxious, expectant of something painful before these apprehensions took any form or had any object. Then I thought of ghosts and kindred wild scenery, that made me always as a boy run by this place after dark. As I forced myself to climb over the black fence under the pines and to touch a few of the nearest grave stones, the nervous awfulness of it all increased. I paused to gather courage and lit a cigar on the nearest tomb stone, forced myself along a rod further, paused and felt great tension. Had there been need, I certainly could have gone through or spent the night there alone, but each time I retired simply because it would have taken such a great nervous effort to have forced myself on. I dread great heights, but can climb almost anywhere, just as here the tension of the neuroses is painful and wasteful. This experience suggested to me many problems. The old fears were, not of very vivid imagery of sheeted figures, etc., but the fear without an object was intense. Whether this was ancestral or caused by the many gruesome tales of childhood or both, it is impossible to tell.

In an old yellow chest I found carefully preserved all my compositions from the first at the age of five on "The Rat" up through various contributions to the unprinted school paper and a kind of valedictory at the age of fourteen, together with several juvenile diaries which I was encouraged to begin at the age of seven. I also succeeded in finding again about all the old school books from the little red primer up to the "village reader," Webster's speller, Colburn's and Adams' arithmetics, Mitchell's geography and atlas, the first grammar, etc., all of which I have carefully looked through, together with quite extensive files of letters of my parents written to me from fourteen on when I began to be away from home. Of this mass of material the most striking fact is how much has been forgotten. The reader was in use for years, and yet I marked only fourteen selections of which I had any recollection. Several of them I recalled memorizing, but beyond the first few lines or verse or two there is only a general feeling of familiarity. The poetic extracts linger longer than the prose; of the fourteen I doubt if more than five have been distinctly in my mind since boyhood days. The great majority were utterly unfit for childhood, and I can recall nothing whatever, but it is always those that were best liked at the time that are best remembered. The speller is most familiar. Nineteen or twenty of the lists of words as they stood in columns (lady, baker, shady), I could still repeat if started.

Many of the illustrative sentences, too, like "fire will burn wood and coal," came back with great distinctness. Clearest of all, however, were the fables in the back with the pictures, and next the abbreviations; but the three pages of laws concerning sounds of letters in the front and rules of punctuation in the back, memorized with such tediousness and unintelligibility, only had a faint echo of familiarity. Now from a perfect understanding of what they mean I could memorize them with approximate verbal accuracy in a very short time. It is curious that the order of disconnected words the same in sound and varying only slightly in spelling should be so much better remembered than coherent sentences, which were interspersed. This, I think, shows the very phonic nature of juvenile memory. Of the geography the pictures were by far best remembered, especially those of men and animals in action. All the scraps about the productions, the fragmentary history and population, have gone, and most of it would be now valueless. The general outlines of the colored states was generally remembered, but I could now easier prepare for an examination in a new science than on this farrago. I read through the shorter catechism and recalled the relation and sequence of the sonorous words, and remembered particularly the crabbed places in the stiff and awkward sentences which were so anti-stylistic, and yet this at the age of nine I knew by heart, teste a diploma to that effect still in my possession signed by the minister, superintendent and class teacher. Of Colburn's arithmetic, in which I was rather expert, the most striking recollection was of the symmetrically ordered lines arranged like poetry. Of the Adams' arithmetic the tables of weights and measures stand out clearest, and next a few specially hard sums, and the rudiments of some of the ponderous rules, together with certain scenes of the schoolhouse (blue slate, blackboard, and teachers) that were associated with them. Of the primer the bright and scarlet cover was best remembered, next the pig sentences, and some of the alphabet pictures. In language work Green's grammar and analysis brought back little that was vivid or pleasing. The ponderous mouth work of the latter (adjective element because it describes a quality according to rule 17; of the third class because it contains a subject and predicate according to rule 23, etc.), looms up through the fog of years. By far the most vivid of all were the school declamations, various sentences of which could be recalled.

The case with my own effusions was quite different. Almost everything here came back in a sense. The favorite topic of my earliest productions was animals and fights. Occasionally, at a very tender age, I lapsed into poetry which was very rich in promise of the bathos of later freshman and sub-freshman



effusions. My two chief endeavors were to be either funny or eloquent, and it is hard to re-peruse these efforts without sentiments of self-pity, and they are a most drastic lesson in humility. The diaries, sometimes kept up at the rate of a few lines a day for a year or more at a time (occasionally I would write up on Sunday all the space for each day of the past week), are mostly very monotonous records of the weather, going to school, but quite frequently with specific events, most of which recalled nothing whatever.

Near the dawn of adolescence, the spring after I was fourteen, I conceived it would be vastly fine to write my own life, and this was spun out to some forty pages of foolscap. It is fullest on school life and events. Nearly every term of the preceding eight years of school life I had had a different teacher, over twenty in all, and each of these is described and in order. This convinces me that a great body of details of early life remembered at fourteen lapse later, for I could not now recall even the names of all these teachers, still less their order. Most of the leading events bring up a sense of recollection, but nearly all the minor ones have been swept away in the stream of time. At this age, too, being an ardent admirer of Silvanus Cobb and Mrs. Southworth, I wrote a story of some eighty large pages and in ten chapters. This was read with what I was led to understand was the most eager interest, chapter by chapter, by a younger girl cousin, but by no one else. I have made several attempts to read it morning and night, when rested and fatigued, but it absolutely will not read, and my mind balks at early stages and I have not yet been able to get half through it. This same year I also made an inventory of all my secular music and catalogued eighty-seven pieces that I could either sing, play, or both; but the tragic pity of it all is the quality. Of most of these pieces I could now whistle or strum the air, in some the rhythm seems intact, but the words are in various stages of decadence. Especially do I recall the secret day dreams I had of being a great musician, orator, literary man, poet, etc. Strongest and perhaps most vividly remembered in all this group is the perfect craze for clog dancing and its various steps and shuffles, together with playing on the bones.

This period of my life, and not before, is marked by the beginning of a coherent and sequent memory. From this time on I can give some account of at least every year of my life in order, and although I can do this to some extent before, most of it is both transposed and too full of gaps. My present life really began here, so that whatever has happened since seems far more a part of myself, and what preceded, despite the filmy links of personal reminiscence, is more objective and as if it were of another person. That a child of twelve months has certain

memories of experience of the preceding week or month, there is every reason to believe. Mr. Colegrove<sup>1</sup> thinks males best remember protracted or repeated occurrences, and females single or novel ones, and holds that there are different kinds of memories that culminate at different periods of life. I cannot, however, think that I remember clothes, tastes, foods, playmates, friends, special pains or pleasures, accidents, or exceptional incidents better at one time than another. Mr. Colegrove's memory curves all show that early adolescence, and particularly the fourteenth and fifteenth years, are on the whole richer in memory material than any other period of life. Probably the years from twenty to thirty come next, as important changes are then occurring. On the whole I think pleasant predominate over unpleasant memories in my life. During all these earlier years, there was no epoch making event like the death or any severe sickness of a member of the family.

Finally, there was every degree of readiness of recall. Some revivals seem purely spontaneous with no external suggestion. Others (the old weasel hole, the mill wheel) came back instantly and clearly upon envisagement. A spot of deadly nightshade was recalled quite clearly, but its personal equation was much slower. A flock of yellow butterflies at a certain spot in the road was dormant for some minutes, but gradually came out with great distinctness. A large bunch of unknown white berries in the woods I slowly came to believe quite surely I had known as a boy, but in other cases the reminiscent sense supervened very slowly and perhaps was not quite clear till the next day. Other objects I must have known well gave no glimmer of reminiscence.

I am able to recall several cases in which I have attached to my own memory continuum alien matter that has been told me and which after having long believed to be a part of my own experience, I was obliged to confess never could have been. Such experiences give me some little charity for those of my theosophist friends who talk and write of the memory of past births and describe their own previous life in the Lost Atlantis, in ancient Greece, when they heard Homer, or when they shouted for Cæsar or Brutus in the Forum, or think they recall with great vividness the items of some particular event that happened to them thousands of years ago with many Lethes of birth and death intervening.

On the whole, painful as have been many of the revivals in this preadolescent past, there has been a preponderance of pleasant impressions. While this does not show that pains

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<sup>1</sup> Colegrove, F. W.: Individual Memories. *Am. Jour. of Psy.*, Jan., 1899, Vol. X, p. 228.

tend to fade and pleasures to survive, because we have no complete inventories of each, it nevertheless comforts me with the sense that on the whole my boyhood was preponderantly a joyous one, as it ought to have been. Finally, the act of recall itself has, I think, in every case had a certain unique kind of pleasure attached to it. I close this all too scrappy note with the feeling that if I were only able to write a complete autobiography of my own childhood and boyhood, reflecting all of even its more typical experiences as they actually were lived and felt at the time, restricted as it was in both nature and circumstances, so that it should be a complete history of all the stages of evolution of even one limited conscious personality, it would be a book second in scientific and general interest as well as practical value to almost no book ever written.

## AN EDUCATIONAL EXPERIMENT.

By **GEORGE E. JOHNSON**, Superintendent of Schools, Andover, Mass.

Many public school teachers, within the last few years, have come to believe that the play of children has an important and practical significance in the work of the schools. Men and women interested in social reform, workers in university settlements, in boys' clubs, and among the young people of certain church communities, have drawn more or less largely upon the play and games of children as an attraction to draw them into good influences, or as a direct means of mental and moral improvement. In the vacation schools established for the children of the city poor in various cities, play has been a prominent factor, particularly in schools conducted after the plan of the Boston Play Schools, which have applied the methods of the kindergarten to older children.

It is the purpose of this paper to describe the work of a school of an experimental character, known as the Andover Play School, which for the last four years has been supported by the Andover Guild. It is a school for boys ranging from ten to fourteen years of age. Its sessions have been evening sessions in the winter and day sessions during the summer vacations of the last two years. The work of the school has been based entirely upon the play interests of the boys attending. The work has varied somewhat according to the season of the year, but the description will concern mainly the work of the summer sessions.

The school was in session for six weeks during July and August, the school day was from half past eight to twelve, and forty boys were regularly in attendance. There were three periods in the school day, the first and third being one hour and a half in length and the second one hour. A free choice of occupation was granted at the beginning of the term, very little occasion for change in the divisions occurring thereafter.

Perhaps the favorite occupation, on the whole, was the wood-work. There was a complete sloyd outfit and a trained sloyd teacher. No attempt was made to hold the boys to a formulated course. The wood-work was to serve as a sort of supply shop for the apparatus used in the school. The boys made their own butterfly nets and fish nets for the nature work. They made the mounting boards used in mounting the specimens,

the cases for the permanent collections, developing cages for the caterpillars, aquaria for the fishes, box traps for catching squirrels, etc. If a boy was interested in archery, he made his bow and arrows; if in cricket, a bat; if in kite-flying, a kite; if in making a present for a younger brother or sister, a toy table, perhaps. Mothers, too, reaped the benefits of the shop; for a boy often turned from his toy making to the making of a sleeve-board, ironing board, bread board, shelf, or something else for the house. Sometimes the boys united in making some giant affair of common interest; as, for example, a great wind-mill which supplied power for turning the grindstone, or a dam and sluiceway for the water-wheel, or a catamaran for the swimming pond.

The nature work was hardly less popular than the toy-making. Nearly every morning there might have been seen a company of ten or a dozen boys starting out with the leader in search of butterflies or fishes, and for the incidental study of birds, or frogs, or snakes, or whatever came to their notice while hunting. The older boys devoted themselves mainly to the butterflies, the younger to the fishes. Nearly every species of butterfly to be found in Andover during the season was captured, many kinds of caterpillars taken and developed into chrysalides in the cages, and nearly all the different kinds of fishes to be found in the streams and ponds of Andover were caught and studied. The work consisted largely of outdoor tramps, but there was also laboratory work, the description and drawing of the worm, chrysalis, and butterfly. Honey bees in an observation hive, and ants in nests made of school slates covered with glass were watched. Some of the ants' nests were successfully kept and watched for months, one boy keeping a colony all winter. The microscope was frequently used in the laboratory work. Note books on fishes were also kept. The interest of the boys was deepest in the gathering and general observation and naming of specimens, the watching and feeding of the fishes, and less in the minuter observation, drawing and naming of parts. The zeal in the hunting of specimens was often intense. It was no uncommon thing to see a boy, when the school was not in session, alone, with a heavy pail on his arm, a fish net in his hand, sweltering along in the dog-day sun seeking some new treasure for his aquarium. Boys who had good luck on these occasions, as for instance in catching some handsome speckled trout, would seek the leader in feverish excitement to communicate the great achievement. During the recent "kissing bug" humbug, a boy sought me in great excitement, having in his possession a cicada, saying he believed it was a kissing bug and that a man had offered him three dollars for it.

but, true to his interest in nature, he spurned the offer and brought the bug to school.

The ignorance of many boys whose environment by no means justified their lack of knowledge was sometimes surprising. A grammar school boy, visiting the school, knew the fishes simply as fishes, being unable to name with certainty a single species. Another boy, who was within one year of the high school, brought to the school, in high elation, one morning, some "speckled trout" for the aquarium, which proved to be tiny spotted salamanders whose legs presented no difficulty to him in his classification.

Allied to the nature work, was the gardening. A part of the school yard was plowed and a definite portion allotted to each boy who chose gardening. Vegetables of various kinds were planted. Last year flower plants were also a part of the care and possession of the boys, and were taken home and transplanted by the boys at the close of the school. The following spring, many of these boys were reported to me as having started gardens of their own at home.

In the winter session stamp and picture collections were substituted for the nature collections, the stamp-collecting craze spreading like wild fire among the school children last winter, some of the candy and cigarette counters suffering thereby to my certain knowledge.

The second period of the day, one hour in length, was spent in outdoor play. In one section of the playground might have been seen a group of boys engaged in a match at archery. In another section, the older boys, perhaps, divided into opposing sides by some natural grouping which lent zest to emulation, were hard at a spirited game of ball. Elsewhere some of the younger or less athletic boys were playing at tenpins on the smooth drive-way, or at bean bags. There were also at times foot-ball, basket-ball, ring-toss, tag games, boxing, wrestling, racing, jumping, vaulting, gymnastic tricks, kite-flying, boat racing at Rabbitt's Pond, swimming races at Pomp's or in the Shawsheen. Three times a week there was a division in swimming. The swimming lessons often served as a good opportunity for collecting specimens or plants for the aquaria. On rainy days there were indoor games, which partook more of the nature of social or parlor games and which were intellectual rather than physical.

The musically inclined boys were always eager for an orchestra. This took the form of the kindersymphonie. The talents and attainments of the boys made the music necessarily crude, but it was much enjoyed by them. The violinists were children who came for the orchestra alone, the play school boys being

confined mainly to time-beating instruments. There was a class also in piano playing which met twice a week.

The printing department appealed to some as real play. The press served in printing the names of the boys in the several departments, the base ball teams, headings for school exercise papers, cards, some bill heads, and, best of all, a four-paged paper issued at the close of the last school, containing compositions by the boys on the work of the various departments, names of prize-takers, cuts of drawings made in the nature work, list of specimens captured, and the like.

Besides the drawing in the nature work, there was a division in drawing for those who preferred it to any other occupation they might have during that period. The work took the form, mainly, of large free drawings from objects. This was the nearest allied to regular school work of any department, unless we except the library from which the boys eagerly drew books of stories, history or nature, for home reading.

Naturally more freedom was allowed boys than is usual in public school work, and occasions for discipline were comparatively few. Some difficulty, however, was encountered in restraining the appetite of some of the boys for apples which did not belong to them. To illustrate in a way the interest the boys had in the school, the following may be worth relating. A fee of fifty cents was collected on the first day of the school. Some boys who were known to have offended the second time in the matter of apple-stealing were denied the privilege of returning to the school, a just proportion of the tuition fee being refunded to the parents. But at the request of the parents the boys were again admitted and they returned, repaid the fee, manifesting their preference to submit to a flogging as evidence that they sincerely intended to resist temptation in the future, rather than to stay away from school.

Another boy in somewhat the same trouble, who followed the swimming class to the swimming pond and endeavored to enjoy the privileges naturally denied him in his season of disobedience, offered so tempting an opportunity for "moral suasion" that he was forthwith turned, in nature's own garb, across the leader's knee and persuaded so effectually that it was not the place where he wished to be, that instantly on his release he gathered his clothes under his arm and vanished. The next morning the superintendent was attracted by the sound of the footsteps of a running boy behind him. Johnny had been thinking of his spanking, with tears presented a letter of thanks from his parents, and besought leave to return to the school. It is needless to say what a good boy he was forever after.

The experimental character of the Andover Play School will

be more clearly understood if some explanation of the theory which prompted the experiment be given.

It has been accepted by many that the child, in his development, epitomizes the development of the race; that there are more or less clearly defined epochs, or stages of growth, in the physical, mental, and moral development of the child; that development progresses from that which is fundamental to that which is accessory, from that which is oldest in the development of the race to that which is newest, from the control of the trunk, for example, to the control of the arms and legs, and thence to the control of the finer co-ordinated movements of hands and fingers; from the fundamental mental operations, as of perception and memory, to association and reasoning; from cleanliness of person, observance of truth, and obedience, to altruistic motives and devotion.

It has been found that when young children are compared with adults, there is a greater difference in the control of fine or precise movements, than in the control of the trunk and larger movements of limbs. At the age of five or six a child is able to walk with ease and grace, but his precision of movement of hands and fingers, for example, is only about three-fifths of that of a boy of sixteen. This difference in control of fundamental and accessory movements is strikingly illustrated in feeble minded children, the control of the finer movements corresponding to a higher degree of intelligence being very deficient. Comparisons made between the lower animals and man show the same increase of disparity in the power of man over that of the lower animals as we pass from the fundamental to the accessory. The muscular arrangement of the monkey hand and that of man is very similar and offers no adequate hint of the disparity in the movements of which they are capable.

Since muscular movement is the expression of nervous activity, we should expect that a study of the development of the nervous system would show a corresponding order of development. Dr. Hughlings-Jackson, the English pathologist, made application of the evolutionary theory in the treatment of mental diseases, conceiving three levels or centers to the nervous system; the lowest level controlling the reflex and involuntary movements, the middle level the higher, more complex movements, and the highest level being the center of universal and complete co-ordinations. The three-level theory is now the accepted basis of diagnosis in the treatment of epilepsies.

Dr. Frederick Burk, in his very able study of the development of the nervous system, draws with apparent justness the following conclusions:

“The order of development of the independent parts of the physical and nervous system is, as a general principle (subject



doubtless to minor exceptions) from that which is oldest in the racial history towards that which is most recent. . . ."

"In an extremely loose sense, clearly recognizing the principle that the organism develops by parts, each of which has a different time of beginning its development, a different rate of ripening, and a different period of reaching maturity; nevertheless, we may regard the period of infancy as one of predominating nascencies of the oldest fundamental activities largely in control of the lowest level of the nervous system; the period of childhood from two years to puberty as the period of predominating nascencies of special sense and their association one with the other; the period of adolescence as the period of the predominating nascencies of the higher form of associations, *i. e.*, those which have been developed in the history of the human race."<sup>1</sup>

The point of application to play is here. Out of these nascencies arise the instinctive tendencies of children. The experiences of the nervous and muscular systems of man in the long period of action and reaction of evolutionary development have made natural, if not irresistible, certain modes of conduct under certain conditions. These impulses to definite reaction to given stimuli re-echo the historic activities of the race, and are called instinctive. Some are intimately associated with organic functions which constitute our physical life, others with the activities which have made for the preservation and enrichment of life. It is the manifestation of these impulses which give rise to the phenomenon of play in children. Play might then be defined as the expression of awakening instincts. To understand its full significance in child development, it is necessary first to understand the significance of instinct.

Prof. James<sup>2</sup> in his admirable chapter on Instinct sets forth the law of transiency of instincts. Many instincts appear, are active for a season, and then fade away. If during the period of activity of any instinct the environment is favorable for its manifestation, a habit of acting in accordance with it is formed which remains after the instinct has faded away; but if the environment is unfavorable for the development of a habit, after the instinct has faded away there will be no reaction in accord with it, however favorable may be the external conditions. A chicken that has not heard the call of its mother until it is eight or ten days old will give no heed to it then. If a babe has been fed with a spoon during the first days of its life, it may not easily learn thereafter to suck at all. A young dog kept from the opportunity of burying its superfluous food

<sup>1</sup> *Pedagogical Seminary*, Vol. VI, No. 1, p. 32.

<sup>2</sup> William James: *Psychology*, Chap. XXIV.

in the soil, went through all the motions of burying articles in the house, but soon abandoned the act and never again attempted to bury anything.

"The natural conclusion to draw from this tranciency of instincts" says Prof. James, "is that most instincts are implanted for the sake of giving rise to habits, and that, this purpose once accomplished, the instincts themselves, as such, have no *raison d'être* in the physical economy and consequently fade away."

The play impulses of children then, we may affirm, have the all important office of giving rise to habits and permanent interests. There is a time when boys love, and must learn, to play ball, swim, skate, or be deficient in such sports and the particular training they give all their lives; there is a time when the zeal for collections or the impulse for construction may do their work in the development of interest in natural history, or of skill of hand; in short, there is a tide in the affairs of childhood which must be taken at its flood, or life, in some particular, be bound forever after in shallows and in miseries.

Taking this explanation of play, we should expect that the play activities of children would, in general, illustrate the order of development given by Burk. This is indeed so. Groos has mentioned in his "Spiele der Menschen" the play of infants with the sense apparatus, the grasping with the hand, sucking with the mouth, playing with parts of the body, experimenting with sense of taste, smell, hearing and sight. These and the motor plays, creeping, walking, running, climbing, illustrate the play activities of the lowest level of the nervous system. From the age of two to puberty there is an increasing tendency to associate sense and motor plays with the accomplishment of some purpose; the individual type of play gives place, more and more, to plays which require several players; there is a higher mental element in the play; the simple imitation as of sweeping or dusting displayed by the two year old child, becomes the imitation of house keeping, playing store, being firemen, and the like. Children unite in games in which now one and now another child comes into prominence, as in the old traditional games of Ring a Ring Rosie, and On the Green Carpet. Emulation, which calls into prominence skill, which means, really, power of co-ordination, gradually becomes more prominent. The eye becomes more alert, the ear keener, and the muscular control increases steadily. The boy eludes his pursuer in a game of tag by dodging; he gauges the amount of effort needed, and the direction of the hand, in throwing a ball, or in tossing a ring. He begins to seek prominence through skill, but as yet it is for himself alone rather than for his "side."

Mr. Crowell's<sup>1</sup> study of the amusements of Worcester school children shows a steady increase in interest in games like London Bridge, from six to ten or twelve, also in games like hide-and-seek, while play with toys decreases rapidly from six years on. Interest in ball games, however, steadily increases up to the eighteenth year.

At the age of twelve interest in games of skill, especially those for which there are opposing sides or teams, increases rapidly. If by this time boys do not begin to learn games of skill, the chances are that they will never be greatly interested or proficient in them. This is the period of development of the association fibres of the brain, according to Flechsig, and of the "highest level" of Jackson. It is the period of the nascencies of the highest form.

To make some practical applications of the theory that the play instincts of children re-echo the historic activities of the race in its march toward civilization, let us review in brief the essential characteristics of some of these activities. I follow the list of some special human instincts given by Prof. James :

1. Constructiveness. This includes the whole sweep of mechanical industries. It has developed from the crude hut and weapon making of the savage, to the highest we have achieved in architecture and mechanic arts.

2. Acquisitiveness. This has developed from the simple idea of possession and ownership, to love of accumulation and preservation of personal and public properties, museums, and libraries.

3. Pugnacity. This is the spirit of overcoming, subduing, whether peoples in war or the forces of nature. It has made possible the horrors of war, but it has made possible, also, the discoveries of the world, the development of new lands, and the conquest of nature, time, distance, and even death. Pugnacity is allied in many ways to the hunting instinct.

4. Sociability. This has made the home, the community, and the nation, and is even now reaching out to embrace the brotherhood of all men. It is manifested in love of kindred, of neighbor, of country, and of humanity.

5. Imitation. "The whole history of civilization depends upon this trait," says Prof. James. "What man has done man can do"—and better is the spirit of imitation coupled with emulation.

6. Emulation. "Nine-tenths of the work of the world is done by it."

To such activities and tendencies have been due, in a large measure, the achievements of the race, and these appear as in-

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<sup>1</sup> *Pedagogical Seminary*, Vol. VI, No. 3.

stinctive in the play of children and youth. And to give scope to their expression was the object of the Andover Play School. As an educational factor the work of the Play School meets several demands.

It meets the demand of the impulse of constructiveness. Here find opportunity for expression, in miniature, the conception of ideals, the habit of execution, which in the race have made the arts what we see them to-day. This is the first great point. It conserves the basic faculty for mechanical and industrial achievement which in our modern minute differentiation of labor tends to be disseminated. Then it supplies in a measure the sense-motor training claimed by Mosso to have been an important factor in the development of the great masters of the middle ages. "Das Geheimniss des Genies ist die Beweglichkeit." Again, the culture of the will, through the conception of an ideal and its execution, as made possible in the choice and construction of models, especially those to serve some definite purpose of the maker, is of the highest value. The imagination, also, is quickened, it holds in poise a remote and worthy end for present action, a necessity in every strong character.

It meets the universal hunger of children for contact with nature, and offers a legitimate channel for the expression of the hunting and collecting instincts. If the love of money is the root of all evil, the love of nature is its great antidote, the great counter-force to sordid commercialism. God speaks through nature also, as through his written word, and he who possesses the great treasures of the hills, fields, streams, and woods, has treasures that money could not tempt him to abandon. And for the child, love of nature leads easily to higher religious emotions and love of God. He who loves God's creatures and creations must love God and see God in them.

"He prayeth best who loveth best  
All things, both great and small;  
For the dear Lord who loveth us,  
He made and loveth all."

It meets the demands of the boy's nature for play and games. In the free play and the directed games is exercised another great force in the development of civilization, sociability. Here children recognize the needs and demands of the whole as in distinction to their own individual needs and demands. Here is the beginning of the community idea, of mutual advantage and dependence, of conformity to public opinion. This socializing influence is one of the best points of the Kindergarten. And when the time for "team" games has arrived, how prominent is the sacrifice of individualism to the general good,

the altruistic motives of conduct. Dr. Gulick<sup>1</sup> has well shown the moral aspects of group games and explained their significance to religious instruction. Here is the proper field for the exercise of the instinct of pugnacity. Here is a legitimate channel for the tendency to organization or banding; the "team" is the natural substitute for the "gang." These games of adolescence hold before boys one clear, definite object, for the accomplishment of which they devote the entire energy of their being. What matters danger to limb, what matters pain, fatigue, loss of self in the struggle of the whole? courage, duty, honor, success are at stake and the victory must be won. The characteristics of these games, says Dr. Gulick, are a tremendous activity, definite end or object, co-operation, and hero worship. The best moral training for Anglo-Saxon boys must involve appeal to these characteristics.

Play is not an accompaniment of child-life merely, it is a necessity, an expression of the child's intrinsic nature. Without play a child cannot come into possession of his physical, intellectual, and moral birthright, can never become a man. Under some conditions the play of children and youth may take care of itself, possibly, and serve its end, but under the conditions of modern life, definite provision must often be made. The race is differentiating so rapidly that children are often denied the environment necessary for a broad foundation, and narrow childhood develops into a top-heavy maturity. Not alone in the ordinary work of education have these facts a mighty import, but especially can no social effort for the children of the city poor do a full work without attention to them. There are numberless organizations in churches, settlements, and charitable societies designed to appeal to certain interests of growing boys and girls, but I believe that they are successful, so far as the method is concerned, to that degree and extent to which they follow the basic activities of the human race. On these may be built a physical, mental, moral and spiritual structure, stable and secure at its foundation. Such is the beginning, I do not claim it is more, the beginning of the full character, but such a beginning as is the choice of the foundation stones upon which is to be reared a noble structure.

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<sup>1</sup>*Pedagogical Seminary*, Vol. VI, No. 2.

## A STUDY OF CHILDREN'S READING TASTES.

By CLARA VOSTROVSKY, Modesto, California.

*"Our teaching must be regulated by what children are."*

The following study is an effort to ascertain in some measure, the general reading tastes of school children, before any organized effort has been made to direct it. In one respect, at least, it is a local study, having been carried on in the schools of Stockton, California, alone. It is possible, however, to lay too much stress on local aspects, for just as we find certain national characteristics in all Americans, whether citizens of Boston, New York or San Francisco, however great the surface dissimilarities may be, so too, it is probable that the differences between the answers of Stockton school children and those of other sections of our country, which may be due to peculiarities of local life, are, after all, of minor importance. But whether this is so or not, must be left for more extended studies to determine.<sup>1</sup>

The material for this investigation was gathered in response to the following simple questions, which were submitted without explanation, to all the children of the different schools on the same day, and at the same hour, so that communication in regard to them was impossible.

1. (a). Do you take books from the Public Library? (b). If so, how often?

2. (a). What was the name of your last book? (b). Why did you take it? (c). How did you like it?

In all, answers from 1,269 children were received, 604 of these being from boys, and 665 from girls. In order to secure uniformity, the results in every case, were reduced to percentages.

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<sup>1</sup>In the Annual Report of the New York State Superintendent of Instruction, for 1897, Mr. H. C. Henderson gives a presentation of the beginning of a similar study by Prof. Thurber, of Chicago University. The results are based on returns from the Grammar Schools of Chicago alone, and as far as comparison is possible, seem to agree in the main, with those of this study.

This is the only other statistical study along like lines, which, as far as I know, has been thoroughly worked over. Attempts at similar studies, most of them much more extended in plan, have, however, been made at various times, especially by librarians. With the exception of an occasional collated result, these give us, as a rule, simply a few impressions gleaned from the children's statements.

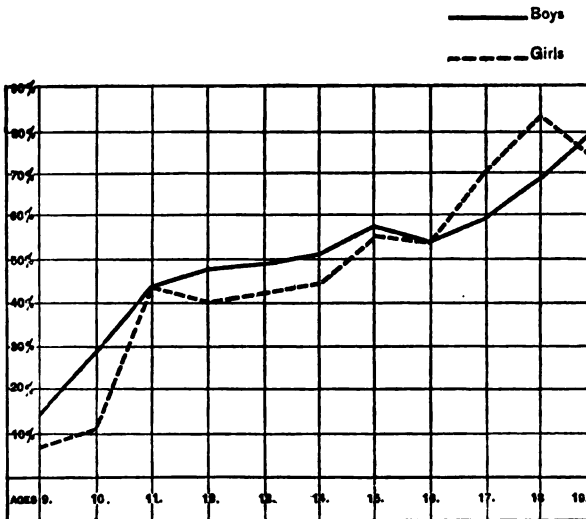
In regard to the use of the Public Library, the answers show that 50% of the boys, and 48% of the girls borrow from its store, against 50% of the boys and 52% of the girls who do not. This is one of the results which would naturally vary with local conditions, such as the age at which children are permitted to draw books, the range of books pleasing to children in the library, etc. It is somewhat contrary to popular opinion to find that the percentage of boys using the library is slightly greater than that of girls.

Of apparently more than local importance is the gradual increase with the age of the number taking books, as shown in the following table and chart.

TABLE A.  
Showing Number of Children Taking Books.

Ages.	9	10	11	12	13	14	15	16	17	18	19	
No. of papers.	27	53	89	98	80	83	62	48	34	16	14	Boys.
	24	53	81	87	92	107	86	74	30	23	8	Girls.
Take books.	15%	28	43	48	49	51	57	54	59	69	79	Boys.
	8%	11	43	40	42	44	55	54	70	83	75	Girls.
Do not.	85%	72	57	52	51	49	42	46	41	31	21	Boys.
	92%	89	57	60	58	56	45	46	30	17	25	Girls.

CHART A. SHOWING INCREASE IN NUMBER TAKING BOOKS.



It will here be noticed that the fact that more boys than girls use the library is due to boys under sixteen years of age; that after sixteen, more girls than boys make use of its shelves. Is

this due to a certain stage in the development of the sexes, to a greater leisure than on the part of girls, or to what is often claimed, but so far as I know not substantiated, that about this time many of the brightest boys leave school to engage in other occupations?

The answers in regard to the names of the books last taken were collated under the headings, 1 Juvenile Story Books,<sup>1</sup> 2 Fiction, and 3 General Literature, the last being again divided into several sub-headings. Whenever there was any question as to the proper placing of a book, the classification in the Stockton library catalogue was referred to and accepted. The result is shown in the following table:

TABLE B.

*Giving Classification of Books Last Taken.*

AGES.	BOYS.	GIRLS.	BOYS.	GIRLS.	BOYS.	GIRLS.
	Juvenile Stories.	Juvenile Stories.	Fiction.	Fiction.	Gen. Lit.	Gen. Lit.
9	100%	100%	—	—	—	—
10	65%	100%	—	—	—	—
11	67%	87%	5%	5%	28%	8%
12	61%	77%	8%	5%	31%	18%
13	74%	64%	6%	22%	20%	14%
14	55%	60%	11%	27%	34%	13%
15	50%	40%	11%	35%	39%	25%
16	44%	18%	12%	35%	44%	47%
17	35%	9%	17%	36%	48%	55%
18	—	—	15%	43%	85%	52%
19	—	—	20%	67%	80%	33%
Average.	54%	49%	10%	26%	36%	25%

The large percentage of fiction, especially juvenile fiction (juvenile story books), is the most prominent characteristic. Children evidently consider the library not as a storehouse for knowledge, but as a storehouse for stories, and one cannot help but wonder whether children who live so largely in the imaginative world are not apt to lose sight of the beauties and enjoyments of real life. On the other hand, it must be remembered that the story, by broadening the horizon and bringing into it new associations, serves as one of the most effective helps to growth (if the stories are well chosen) that is open to childhood. So if we decide that there is a tendency among children to reading too many story books, we must be careful while endeavoring to regulate this, not to destroy altogether, the enjoyment which the child finds in placing himself in these new surroundings.

Turning again to the table, it will be seen that about the sixteenth year, a change takes place, both boys and girls showing

<sup>1</sup> It should be noted that according to this classification, some juvenile books would have to come under the heading of General Literature.



then the beginning of a greater interest in works of a more general character. (It is doubtful, however, if the works in general literature would have been even as well represented as they are, if the test had been made during vacation, instead of during the school term.)

By referring to Charts B. and C. given below (based on this same table), one sees more clearly the natural decrease with the age in the number of boys and girls naming juvenile story books (Chart B.), and also the noteworthy fact that girls apparently read very much more fiction than boys, more names falling under this heading at every year after the twelfth. (Chart C.) That the decided interest in fiction begins about the age of adolescence is also worth noting. Does this greater interest in fiction go with the earlier maturity of girls? There are more boys and girls, on the other hand, interested in juvenile story books after the fifteenth year. (Chart B.) Then, too, boys have a better record for the use of books classified under general literature, the number given being greater at almost every age than that given by girls. (Table B.)

The works falling under General Literature were sub-divided into History and Historical Biography; Literature and Literary Biography; Science; and Miscellaneous; as the following complete table shows.

TABLE C.

*Showing Total Percentages of Different Books Drawn.*

Juvenile, .....	Boys, 54%
	Girls, 49%
Fiction, .....	Boys, 10%
	Girls, 26%
Gen. Literature, .....	Boys, 36%
	Girls, 25%
Hist. and Hist. Biog. ...	Boys, 15%
	Girls, 10%
Lit. and Lit. Biog. ....	Boys, 4%
	Girls, 7%
Travels, .....	Boys, 4%
	Girls, 3%
Science, .....	Boys, 7%
	Girls, 2%
Miscellaneous, .....	Boys, 6%
	Girls, 3%

CHART B. SHOWING DECREASE IN THE NUMBER TAKING JUVENILE STORIES.

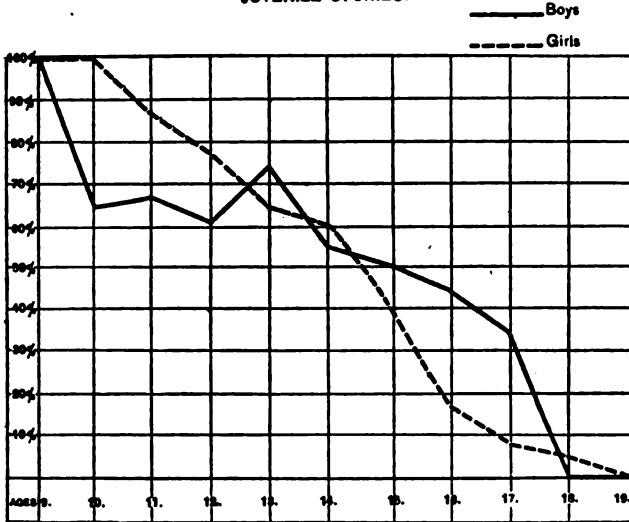
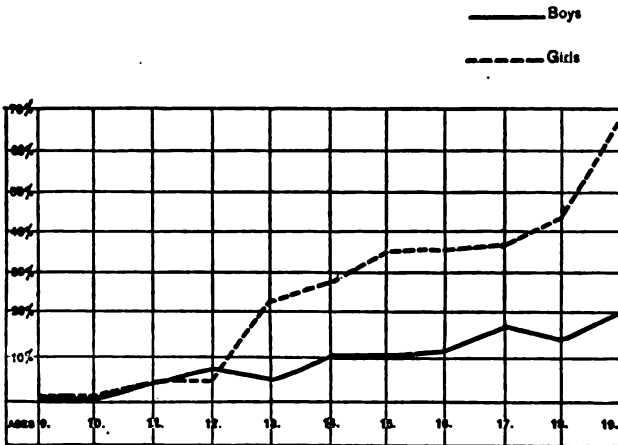


CHART C. SHOWING INCREASE IN WORKS OF FICTION.



The fact that history and historical biography take the lead in the works of general literature may be due to local causes, showing what can be accomplished through the efforts and enthusiasm of a special teacher of history. Girls confirm what is generally supposed to be true in regard to feminine taste by the

larger percentage naming literary essays and literary biography, while boys prove more interested in science and also inclined to be more interested in history and travels.

Keeping in mind the kind of books named, let us turn to the question in regard to how often they were taken. We find answers varying from those who read only one book a month (and they are fairly well represented), to those who plunge into a new work every other day. After these extremes, it is somewhat of a relief to find that the majority exchange their books about once a week. (Chart D.) Considering that it is mainly stories that are read, is this or is this not, too often?

CHART D.

*Showing Relative Time in which Books are Exchanged.*

	Boys.	Girls.
Once a week,	38%	38%
Once in two weeks or ten days,	27%	31%
Once a month or more,	15%	21%
Twice a week,	15%	7%
Every other day,	5%	3%

Boys, it will be seen, not only read more books, but read them more hastily; and too hastily, one is inclined to add, although the fault may be no worse than the opposite one into which girls seem more prone to fall, that of dilly-dallying over a book too long, as seems to be the case when they declare that they exchange their books (which are quite as simple as those taken by boys) only once in a month or more.

The expressions of the children in regard to how they liked their last books, reveals the fact, if anything can, that the critical attitude is not developed early in life. The world is all so new to children, they are so eager to gain new experiences, that if a book along the lines in which they are interested has only some little mark of merit, it is sure to please. Table and Chart E. show this.

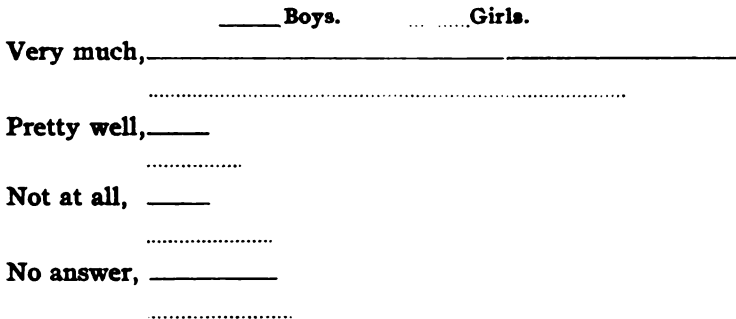
TABLE E.

*Showing how Special Classes of Books are Liked.*

	JUVENILE.	FICTION.	GEN. LIT.	AVERAGE.	
	Per cent.	Per cent.	Per cent.	Per cent.	
Very much,	76	94	71	80	Boys.
	78	68	64	70	Girls.
Pretty well,	8	—	6	5	Boys.
	2	9	13	8	Girls.
Not at all,	6	—	8	5	Boys.
	9	11	11	10	Girls.
No answer,	10	6	15	10	Boys.
	11	12	12	12	Girls.

CHART E.

*Showing how Books are Liked in General.*



If what was classified under the headings "Pretty well," "Not liked," and "No answer," should be combined, it would not begin to equal what was liked "Very much." This is encouraging in one sense, for if children are so easily pleased it cannot be difficult to direct their taste for what is good. Girls, it should be noted, are somewhat more critical than boys in regard to the books which they read.

Among the most interesting answers were those to the question "Why did you take your last book?"<sup>1</sup> 67% of the boys and 62% of the girls gave definite reasons for taking the books, against 33% of the boys, and 38% of the girls who answered indefinitely, as, "Because it was nice," "I took it to read," etc. Table F. and the accompanying Chart show the steady increase in the more definite answers, especially in those given by boys.

<sup>1</sup> Children, as well as other patrons of the Stockton Public Library have free access to the shelves.

TABLE F.

*Giving Percentages of Definite and Indefinite Answers.*

Ages.	DEFINITE.		INDEFINITE.	
	Boys. Per Cent.	Girls. Per Cent.	Boys. Per Cent.	Girls. Per Cent.
9	40	50	60	50
10	42	50	58	50
11	52	42	48	58
12	59	47	41	53
13	63	55	37	45
14	71	60	29	40
15	74	86	26	14
16	77	75	23	25
17	78	68	22	32
18	89	80	11	20
19	100	100	—	—
Average.	67	62	33	38

CHART F, SHOWING INCREASE WITH AGE IN DEFINITE ANSWERS.

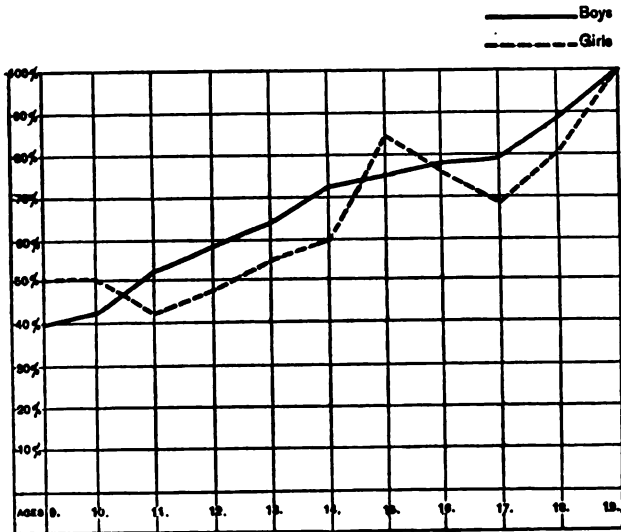


Table and Chart G. give the special reasons for taking out books.

TABLE G.  
*Showing Why Books are Taken.*

	Juvenile.	Fiction.	Gen. Lit.	Average.	
	Per cent.	Per cent.	Per cent.	Per cent.	
Substance or school,	18	18	78	38	Boys.
	8	6	71	29	Girls.
Good, nice, etc.,	29	21	7	19	Boys.
	32	23	12	23	Girls.
Recommended,	13	29	3	15	Boys.
	23	36	5	21	Girls.
To read,	9	11	4	8	Boys.
	10	8	7	8	Girls.
Author,	6	7	1	5	Boys.
	2	10	1	4	Girls.
Name or Series,	2	—	—	1	Boys.
	6	2	2	3	Girls.
Miscellaneous,	22	14	7	14	Boys.
	18	15	2	12	Girls.

CHART G.  
*Showing Why the Books were Taken.*

\_\_\_\_\_ Boys.      ..... Girls.

Substance or School, \_\_\_\_\_  
 .....  
 Good, nice, etc., \_\_\_\_\_  
 .....  
 Recommended, \_\_\_\_\_  
 .....  
 To read, \_\_\_\_\_  
 .....  
 Author, \_\_\_\_\_  
 .....  
 Name or Series, \_\_\_\_\_  
 .....  
 Miscellaneous, \_\_\_\_\_  
 .....

In these answers, the Stockton school children make a good showing, since the majority state that they took their books because of what they contained (substance), or for school purposes, the classification under substance being made up of such answers as, "I took the book because I was interested in reading about the life of Peter the Great."

Not only do more girls than boys rely on a mere feeling of niceness in regard to their reading, but more, too, rely on the recommendations of their friends. The greater independence on the boys' part, goes with the more definite reasons for taking out books, which is confirmed by the greater percentage under "substance and school." The inference that boys are guided more by reason, girls more by sentiment, in their reading, is strengthened by the fact that the results in Juvenile, Fiction, and General Literature corroborate one another in regard to this.

The prominence given to recommendation in the children's answers shows the importance of their associates. The desire to read what others have read, to improve and broaden out in the direction of those who are nearest, is so general that it should not be lightly regarded by those who attempt to influence a child's reading taste. In looking over those whose recommendations were most often followed, the children's "chums" and schoolmates are seen to head the list. Relatives are occasionally but not often mentioned, while the teacher who might do so much, is seldom named except in connection with works of reference.

Certain other very marked differences between the sexes, come out in this study, particularly in a classification of the children's tastes as definitely mentioned by themselves, especially in regard to the juvenile story books which they read, since it was found that in drawing these the children consulted their real interests most often. In this classification, 52% of the girls say that they took the story because it was about children (generally about girls), while this is true of only 12% of the boys. Only 24% of the girls chose the book because it was exciting, while 76% of the boys state their delight in the venturesome. This great difference is made still greater by the fact that the exciting stories mentioned by the girls are very quiet compared to those mentioned by the boys, "The Young Lieutenant," by Adams, and "Robinson Crusoe" being perhaps the most exciting. The boys' tastes in general are well illustrated by a boy of twelve, who states that he took "The Moose Hunters" because he liked to read "about the wilderness of the world;"<sup>1</sup> while the following sentiment by a girl

<sup>1</sup> It is probably due to a recognition of this that certain boys' magazines, like Harper's "Round Table," which devote themselves largely to stories of adventure, have achieved so great a popularity.

of fourteen is shared by a large numbers of others, "I like 'Quinnebasset Girls,'" she says, "because it tells all about the thoughts and feelings of girls."

TABLE I.

*Showing Children's Tastes, as Definitely Mentioned by Themselves.*

	BOYS. Per Cent.	GIRLS. Per Cent.
Because of children.....	12	52
Because of adventures, etc.....	76	24
Because funny.....	6	12
Because of misc. reasons.....	6	12

Since the name of a book presumably plays some part, however unconsciously, in deciding whether or not it will prove interesting, the juvenile books were again classified to see whether the titles in themselves bore out, in the main, the children's statements in regard to their preferences. 71% of the girls' books had names suggestive of children, while this was true only of 21% of the boys' books. While some of those mentioned by the girls were in regard to boys alone, not one given by the boys was merely in regard to girls. Are girls, then, more interested in their brothers than boys are interested in their sisters? Only 10% of the names of the girls' books indicated adventures against 50% of the boys' which had such suggestive titles as, "The Young Defenders," "A Night in the Swamp," etc.

TABLE J.

*In Regard to Titles of Last Book.*

	BOYS. Per Cent.	GIRLS. Per Cent.
Of children.....	21	71
Of adventures, etc.....	50	10
Of fairy-land.....	6	6
Misc.....	23	13

All this taken together seems to indicate girls more domestic and boys more adventuresome tastes. It is in line with what Max. Pemberton, who has himself written books for boys and edited a boys' paper, has to say: "For style a boy cares nothing; he reads Stevenson for the story. He must have incident, excitement,—a hero."

When we come to the authors most often mentioned by boys and girls, we meet again the wide dissimilarity in their preferences. Girls mention 79 different authors, boys 65. Only 17 are mentioned by both, and of these, Louisa Alcott and Horatio Alger are apparently the only ones who enjoy at all anything



like equal favor.<sup>1</sup> Alcott, by far, stands first in the girls' list, Sophie May comes next, followed by Martha Finley, H. Alger, Minnie Paull, Frances H. Burnett, in the order given,—almost all women writers, it will be seen.

W. T. Adams (Oliver Optic) is the favorite with boys, being named almost twice as often as his successor Henty. Then come Edward S. Ellis, Horatio Alger, followed by Harry Castleman, J. T. Trowbridge, and L. A. Alcott,—in this case almost all men writers.

In fiction, taking the entire number of books mentioned, it is interesting to find that more standard works were drawn by boys than by girls.

There were so few juvenile works that were not liked, that as many of these as possible were read in the hope of discovering somehow, what it was to which the child objected. In some cases, as in "Polly Oliver's Problem," which was not liked by a girl of fourteen, it was impossible to understand why. In others, the solution seemed an easier one. Thus, "Captain Polly," by Sophie Swett, was probably not appreciated because the subject of labor and capital taken up in it, was imperfectly understood by the girl of thirteen who read it. Then, too, there may be in the story, a little "preachiness" to which children object. James Otis's "Tim and Tip," was not liked, a girl's paper stated, "because the first part was sad." This was probably the objection that two girls and a boy had to "Nibby's Christmas" and "Little Nell." A girl of fourteen, threw aside "A Bread and Butter Miss" in disgust, because it seemed to her "silly." That a boy of twelve did not care for P. C. Headley's "Fighting Phil," is no doubt due to the superabundance of detail introduced in its pages. This objection to useless detail is well expressed by a boy of fifteen, who, in referring to certain histories, says, "These books were written in an odd way, that is because they told every little event, which was useless."<sup>2</sup>

In summarizing the main results of this study, we find that the children of Stockton use the public library to a greater and greater extent as they grow older, more boys doing so before the age of sixteen, and more girls after this age. Fully half the books taken are juvenile story books. In regard to pure fiction, girls prove much more interested in works of this class, than do boys. The latter, on the other hand, show a greater preference than do girls for works of a more general character.

<sup>1</sup> There is a wide range of juvenile literature from which to choose, in the Stockton Public Library.

<sup>2</sup> This objection to useless detail is in line with one of the results of my little "Studies of Children's Own Stories," published in Earl Barnes's "Studies in Education," Stanford University, 1896. pp. 15-17.

The special interest that girls have in fiction begins about the age of adolescence. After the sixteenth year either the extreme delight in stories fades, or school demands make it necessary for both boys and girls to use the library then more largely for works in general literature. Of these works boys care more for science and history and historical biography and travels, girls more for literature and literary biography. The exchange of books varies in time from every other day to once in one or two months, the majority drawing a new book once a week. Boys, on the whole, seem to read more hastily than do girls.

In stating how much pleasure they have gained from their reading, both of the sexes show lack of critical ability, yet despite this, state definite reasons for taking out books, and prove to have definite tastes. The definiteness in the answers of both increases with the age. In the special reasons which they give for using the library, about one-third state that it was for school purposes or for some special information that the book contained. A large percentage were guided, however, solely by an indefinite feeling of niceness, etc., in regard to the story, while quite a fair number depended on the recommendations of their friends. Few mention the author or the name alone as having influenced them. Taken altogether, boys are more definite than girls in their answers, and more independent in their attitude.

In the classification of the children's tastes, as stated by themselves, we get the most marked differences between the sexes. According to this, girls prefer domestic stories, especially stories about children like themselves, while boys care more for books of adventure. This difference in preferences is confirmed by the classification of the titles of the last juvenile books taken.

No boy confesses to a purely girl's story, while girls frankly do to an interest in stories about boys. Women writers seem to appeal more to girls, men writers to boys; hence the authors named by each sex, are almost entirely different. In fiction, more standard works were drawn by boys than by girls. The fact that certain juvenile books were not liked, seems due to a superabundance of descriptive detail in them, to the introduction of sad scenes into the story, to what seemed to the child "silly," or to what was imperfectly understood.

It is probable that the special reading tastes of boys and of girls may have their foundation in the history of the race. This does not mean that these preferences, however good in themselves, do not require direction. When left to develop according to chance, as seems to have been quite largely the case with the children of Stockton, the tendency is often towards a selection of books which unfit one for every day living, either by presenting, on the one hand, too many scenes of delicious excitement, or, on the other, by narrowing the vision to the wider possibilities of life.

## FOUNDATIONS OF NATURE STUDY.

By C. F. HODGE, Clark University.

Any subject in the curriculum, even nature study, may be taught in so superficial a way as to deserve to be called a fad. Essentially, a fad is something trifling or something important treated in a trifling manner, and in education there seems to be a fatal gravitation toward a faddistic treatment of almost everything. This is possibly due at bottom to the fact that our educational system is in reality an evolution, a living, moving, growing process, while for sake of ease, its methods tend to become deadly mechanical. So from time to time everything has to be jerked out of its dead shells and brought into vital relations with the needs of actual human life. Thus the past few years have witnessed a general moulting of the old mechanical methods even in such fundamental subjects as reading and spelling, writing and drawing, arithmetic, geography and history, and certainly to all but the ultra conservative, to all who look upon our school system as a living and growing embryo, nothing affords better assurance of life than just these growths, moults and changes toward establishing fundamental relations between education and the realities of human life, the environment to which all really living education must conform. And in comparison with the whole history of the race how recent, how new, how very embryonic a thing is a formal system of public education. It is not strange that in these earlier stages it should assume invertebrate methods of growth with all the attendant crises of transformation and moulting as development proceeds.

A more economical and rational method of growth has come to predominate among the vertebrates where plasticity is maintained and the process goes on insensibly and free from the shock and contortion of a crab pulling himself out of his shell. This vertebrate method must be attained by keeping things plastic and especially by developing such intimate relations between education on the one side and actual life on the other that no great degree of disadjustment can ever occur. When this is accomplished, education in its every phase can become the true preparation for real life, for which the prolonged period of human infancy, childhood and youth was intended and developed.

The problem of saving a subject from faddism and superficiality consists thus in discovering its fundamental relations to human life and building its pedagogy along these lines. To do this with elementary science seems to have been extremely difficult. Attempt has followed attempt, the last worse than all its predecessors. This may be due in part to the newness, the great complexity and the suddenness with which natural science has come upon the educational field; but it has seemed to the writer that the chief cause of difficulty and failure has lain in not distinguishing clearly between the special and trivial in science and the fundamental. And it must be generally conceded that the important and fundamental should precede the special, and should constitute the body of elementary science from which all later specialization may spring. Lest a misunderstanding arise here, I must add that I refer to those aspects that are educationally fundamental, and not to the special propositions which may be fundamental to any particular science. My meaning on this point will be clear as we proceed.

The object lesson has thus gone by the board. Why did it fail? Ask James Whitcomb Riley and he will tell you in a way that leaves no room for further question. Observation is an important thing, training the powers of observation is important, but their value depends upon the *worth-whileness* of the whole process including the object and purpose of the observation; and if it consisted in "observing" the color of a "blondé" or "brunette" peanut, the whole lesson becomes a ridiculous waste of time. So, too, scientific analysis is a fundamental process; but for elementary work the revolt against it is universal. We must first have a knowledge of wholes, before we can profitably analyze into parts. Making classification an important part of elementary science courses is again putting the cart before the horse; for children must have things before the need of names and classification comes into any prominence.

A paper ought to be written on the utterly chaotic state of elementary science instruction just at present. My purpose, however, is rather constructive than critical. Out of all the chaos, in which we find primary classes maltreated with every imaginable subject from the minute structures of insects and the structure and functions of root hairs, cells and protoplasm to the abysmal inanity of counting the legs of a boy, one clear demand has emerged. In a word this is, "give us wholes adapted to the child's understanding and let them be first studied in their normal relations," *i. e.*, "give us first, as foundations for all science work, actual *nature study*."

Answers to this demand have been numerous, to say the least, but I have no time to discuss the many and various plans

suggested. That would require another paper especially devoted to it. But when it is possible for so good a nature student as John Burroughs to say: "Of the books upon nature study that are now issuing from the press to meet this fancied want of the schools, very few of them, according to my thinking are worth the paper they are printed upon. They are dead, dead, and neither excite curiosity nor stimulate observation."<sup>1</sup> It would seem that even this newest and most hopeful movement toward elementary science teaching were fast going the way of its forerunners. If it is to be saved from their fate, it is high time that we strive to ascertain the fundamental elements of this important work.

It seems to me that man's real, fundamental interest in and relations toward nature should point to what is fundamental in nature study, and for these we have two great sources of information. The first of these is the development of relations with nature as recorded in history; anthropology, and to some extent in geology. The second is found in the spontaneous interests of children as revealed in modern child study. Besides these there are other blocks of foundation material in the psychological laws which determine quality of knowledge and interest in general, in man's ethical and social relations towards the resources of nature and in his fundamentally religious relations to nature. These we will consider briefly in order.

Astronomy is often credited with being the oldest of the sciences, and in consequence is made the general background for nature study courses, the rolling year, seasonal changes, etc., etc. I doubt whether this is true in any fundamental sense. Ancient astronomy was little, if any, more than an art, combined with religion or superstition, by which men measured *time*, one of the most important of human possessions. At farthest, authentic data of Chaldean civilization extend back only 6,500 years B. C., and back of all these faintest glimmerings of anything approximating formal science lie tens, certainly, and possibly hundreds of thousands of years of *human nature study*. Here is the place to dig for foundations. What relations has mankind established with nature during this vast period? This is an all important question, for on these foundations civilization itself has been constructed.

From what we know of human progress and primitive cultures it is possible to project the curve back into this primordial age, dark or "golden," as you please, to give us some conception of this great period of nature study.

And first, we would find man, a highly crafty and intelligent

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<sup>1</sup>John Burroughs: Nature Study. The Outlook, Feb. 4, 1899, p. 326.

^natural shelter of caves. He lived in families, the period of omnivorous animal disputing with the brutes for food and the infancy being somewhat prolonged, affording the children time to learn the prowess of their parents, possibly of their grandparents. Language, God save the mark, was but slightly developed and hence the education of the children of that time was real and active, related to the whole neuro-muscular system. There was naturally little stability of home life, much wandering about in search of food and much being chased about by wild beasts and rival families of men.

"Suppose," says Professor Huxley, "that an adult man, in the full vigor of his faculties, could be suddenly placed in the world, as Adam is said to have been, and then left to do as best he might, how long would he be left uneducated? Not five minutes." But there are a good many "five minutes" in ten thousand years. "Nature would begin to teach him," he goes on, "through the eye, the ear, the touch, the properties of objects. Pain and pleasure would be at his elbow telling him to do this and avoid that; and by slow degrees the man would receive an education, which, if narrow, would be thorough, and real, and adequate to his circumstances, though there would be no extras and very few accomplishments."

Nature's education through this long period consisted in teaching man the plants capable of furnishing food and means of shelter; how to avoid at first, and later how to outwit and conquer the more powerful animals that hunted him; how to make and use rude weapons of wood or bone or stone with which to hunt and fish, as well as to fight, for undoubtedly, from all but the very earliest times, man was his own most dangerous enemy. How infinitely much more primitive man was obliged to learn, and how infinitely more alive and real was the quality of his knowledge, of the ways and wiles of animals than is obtained by seeing a few superficial characters of an animal and learning its place in an artificial scheme of classification, or in counting the legs and tail of a cow. How much more real was his knowledge of the sun, moon and stars, when they were his only clocks.

That this education was successful and adequate is witnessed by the fact that it built the human brain up to practically what it is at present. Spencer's statement that the brain of civilized man is "nearly thirty per cent. larger" than that of the savage is wholly superseded, and were it true, would not apply, because the savage brain of to-day might be degenerate from primitive conditions. For this reason, whether we consider savages degenerate or not, we cannot look upon the present relations between savages and nature as primitive and fundamental. They have, in general, secreted a psychic shell of tradition and super-

stitution which, for the most part shuts them off, protects them, from the immediate tuition of nature in the midst of which they live. And, in just so far as their education consists in learning these secretions of human imagination instead of the realities of nature they remain fundamentally uneducated, or miseducated. Exactly the same applies to, so-called, civilized systems of education. When we consider that the Engis skull is "a well shaped averaged human skull," indicating an average European brain of the present; and when we realize that Nature has built it up to the level where civilization is possible, we begin to realize that a scheme of education which leaves the "Old Nurse" in the background, is likely to fail in laying the solid foundations of civilization. It is a system of elementary education with *really elementary education left out.*

Up to this point man has gathered a precarious livelihood by hunting, fishing and browsing. His life has been wholly a struggle *against* natural forces. Undoubtedly he has learned the advantage of obtaining assistance of his kind in attaining ends too difficult for individual effort, as a good many animals are known to do. Even wolves hunt in packs and keep up a difficult chase by relays. So that as the first great foundation of nature study we must have the social relations of man to man, the individual to society. Here we derive the very beginnings of unselfishness and altruism, the "consciousness of kind," about which we have learned so much of late. And still it is questionable whether this is really the basal thing or whether even this primitive human co-operation was not itself forced upon mankind, in part at least, by the dire necessities of his struggle for life. Were this view to prevail, we should be obliged to seek our lowest foundation strata in that terrible strife, chiefly with brute nature, through which the race struggled out obedience to the second great command; the first being: "Be fruitful and multiply, and replenish the earth;" and the second: "Subdue it, and have dominion over the fish of the sea, and over the fowl of the air, and over every living thing that moveth upon the earth."

Since this first command relates to human family and social relations, we may give it the benefit of the doubt for the present, calling it the first stratum in nature study foundations. Certainly the second command, "subdue," "have dominion," is given in the same breath and, if not belonging with the first, is evidently entitled to the second place. This period of utter enmity, tooth and nail, club and stone fight against nature for life, this period of pure savagery, was probably longer than all the other culture epochs combined. In accordance with doctrines of the "ascent of man" it gave him his fundamental humanity,

the crown of victory, won through endless conflicts of thousands of years, from which the human head rose—

“ Bloody but unbowed ”—

to receive it.

This period gave to man his bodily form with its suppleness, strength and endurance, his craftiness and native intelligence, his moral qualities, courage and indomitable will, the occasions and materials, at least, with which he could work out his social organization, and possibly some beginnings of religious reverence toward the more overwhelming phenomena about him. In many cases, this religious side came into dominance and a branch of the race swerved from the command and sunk into an imbecile worship of animals and even trees. A large branch even of the Aryan trunk suffered this decadence, but all these are wholly aside from the main line of human advance, terminal twigs left early far behind. Even the extermination of the huge mammoth, according to professor Shaler,<sup>1</sup> is probably “ to be accounted among the brutal triumphs of mankind, perhaps the first of the long tale of destructions which he has inflicted on his fellow-creatures.”

At whatever stage a babe first opens his eyes upon the world of action, whether animal, savage or civilized, or a mixture of all three, and whatever theories we may have on the subject, we are obliged to reckon with the fact that a young boy is a good deal of a savage to say the least. This savagery may be merely a logical consequence of lack in education and experience, coupled with an explosive ebullition of energy, or it may be due to direct inheritance from a savage ancestry. In either case, may not a rational pedagogy supply him with enemies with which he can fight a “ good fight ” rather than a bad one on his way to becoming a juvenile barbarian?

From abject savagery two momentous advances in nature study opened the way towards civilization: the one, *domestication of animals*, the other, *cultivation of the soil*. These great steps must have followed something like the sequence of a logical necessity. No important domestication of animals could have taken place, until man had arrived at his supremacy; no effective cultivation of the soil was possible, until he had obtained the assistance of the ox and horse. Prior to this, his flocks must have been wholly, as they have always been in part, but food for his fiercest enemies, and his crops would have been trampled into the earth.

It is interesting to note that the world over the dog was the first animal, as Shaler puts it, “ made captive and friend for the sake of companionship rather than for any grosser

<sup>1</sup>Shaler: *Domesticated Animals*, p. 130.



profit." This may be claiming a good deal for primitive platonic friendship: for the first tamed dog must have been helpful, in following game, in capturing probably more than he ate, in giving warning of danger. And for the sake of nature study, it may be within bounds to imagine that the first wild puppy was brought by some savage hunter to his little boy, as a cat brings live mice to her kittens, that the boy became attached to it as a possession and companion and that the new-found friend first attracted serious attention by arousing the camp when threatened by danger at night, or possibly accompanying his father on a subsequent hunt, the boy took his pet along and thus gave this his first "Fido" an opportunity to demonstrate his worth for keen scent and speed.

It is altogether possible that this boy with his newly acquired helper went hunting on his own account and brought home game which neither alone could have caught; so that possibly by the play and plastic intelligence of a child was brought to man's attention the great truth that there are friends and allies in the animal kingdom; and this, Shaler considers on some accounts the most important step of the race toward civilization. A new relation to nature is thus revealed.

According to Shaler, again, human races fall into two divisions: "those that have tamed the horse and those that have not." "No other creature has been so inseparably associated with the great triumphs of our kind, whether won on the battle field or in the arts of peace." For thousands of years of primitive warfare it was as sure as gravitation that the side that commanded the strength of the horse should win. Here, again, it is entirely possible that some motherless colt became the companion of a child, was ridden in play, and thus the idea which has done so much to cast the die for Aryan conquest dawned in the plastic mind of youth.

The complete or partial domestication of practically all our important animal allies antedates authentic history. Brushing aside the fine spun cobwebs which would separate human art and science, the man or boy who first conceived the idea of taming the horse must be reckoned as the foremost biologist of his time, and should rank with the great geniuses who have since tamed steam (another boy) and electricity. But with their flocks and herds men must wander from place to place for pasture, *i. e.*, be homeless nomads, half civilized barbarians.

In point of its influence upon the stability of human society, and as forming the foundations of actual civilization, the step towards soil culture would seem to take precedence over all others. It was decisive for stable, social institutions. It meant indefinitely increased food supply, food variety and many other material resources. Since the fundamental necessities of life

must be secured before we can have higher things, it contained the prophecy of world commerces and, as well, of literatures, arts, philosophies and sciences. Even at the time, it indicated the presence of the intellectual and moral elements that are fundamental to human civilization. To plant and rear a few simple products proved that the men who did it had studied nature sufficiently to follow her methods as to seasons of seed time and harvest and location of habitat. It showed, most of all, that men had developed the courage to fight for their homes, at the same time giving them something worth fighting for, and the moral stamina to work for their daily bread and for that of their offspring. Many individuals at present are far below this moral threshold fundamental to civilized life. Contact with the soil and its plants, together with relations with domesticated animals already formed has thus furnished the great matrix of psychic evolution, the modeling material which even the sculptor requires to quicken his ideal, to steady and help the unfolding dream until step by step it becomes perfect. They have furnished in large part the material of opportunity and experiment by which man has shaped his larger dream from the simple provision of food for himself up to discovering favorable cultural conditions, which have made two blades grow where one grew before, and finally by selecting or originating better varieties of grain, fruit or flower to confer lasting benefits on the race; and this is one of the crowning triumphs of human altruism.

Recent investigations in Chaldea<sup>1</sup> indicate that 6,500 years B. C. the rich plains of the lower Tigris and Euphrates supported a stable agricultural civilization. The size of their cities and the advancement of their arts would point to perhaps three or four thousand years at least in addition as necessary for their development. Thales founded Greek astronomy about 600 B. C., and Ptolemy constructed his system about 150 A. D. De Candolle<sup>2</sup> gives a list of 44 species of plants which have been cultivated for more than 4,000 years. A number of others may be as ancient, but coming from countries without literatures, records of their cultivation are wholly lacking. Some knowledge of fire was an early possession of the race, dating, probably, far back into the ages of primitive savagery, but, important as it is, fire has no such fundamental relation to human life as the plants and animals which furnished man food, clothing, companionship and his closest associates of the chase, of war and of all the arts of peace.

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<sup>1</sup>Sayce: *Babylonians and Assyrians*. N. Y., 1899.

<sup>2</sup>De Candolle: *Origin of Cultivated Plants*. Appleton & Co., N. Y., 1895.

In a word, the fundamental relations to nature that have made civilization possible are all biological, domestication of animals, cultivation of plants. Those who insist on the fundamentality for nature study of astronomy or any of the other recent sciences on the ground that they are logically or historically first, are building their systems in mid-air.

In addition to the evidence already adduced it is interesting to note that the command to "have dominion" in the story of creation directly specifies "over every living thing," and goes on to name "herb" and tree, and fish and fowl and beast; and man was put into a garden "to dress and to keep it." And, finally, the first lesson given to man, and by the Creator himself, was not one in the "fundamental" science of astronomy or chemistry, or physics or even botany, but a lesson in zoölogy, an ideally practical lesson, in which the "Lord God brought every beast of the field and every fowl of the air to Adam to see what he would call them."

We find, thus, every sanction for making *biology*, the relation of man to the life about him the foundation of elementary nature study. Child study, experience of teachers and common sense all focus so strongly upon this that we might, in fact, have laid it down at the outset, were it not desirable to state the historico-evolutionary argument somewhat fully. Especially was this necessary on account of the number of plans in the field which leave it wholly out of account.

The next question is: What use are we to make of these biological foundations?

For ages untold man has existed as a savage whose command from on high was to "*subdue*" every living thing in the air, on the earth, in the waters. Shall our nature study courses then turn the child's savage passions loose to vent themselves in promiscuous destruction? This is not the only course indicated, if, indeed, it is indicated at all. The child enters the kindergarten at four or five. So far as the writer is able to judge a child of even two or three is capable of some degree of appreciation of the sufferings of an animal. While, if left to himself, he may seem to take pleasure in the lively reactions, at least, of an animal in pain (and the facts which have come to my attention would bear this interpretation rather than the usual one that the child delights in the pain itself), a very little wise pedagogy, coupled with a touch, if needed, of the practical physiology of pain (of the child himself) will suffice to bring him through this stage with lightning rapidity to where he takes evident delight in giving pleasure rather than pain to his animal associates. But this stage is probably earlier than the fourth year, and its successful passage should be largely

a matter of home nature study—the proper treatment of the pet kitten or dog.

If this work be done and relations of sympathetic interest in animal life be thus established in the home the early grades may develop the subject of taming animals and widening sympathetic relations with nature. The conduct of such a course presents a logical difficulty which should be pointed out.

The dog, horse, cow, goat, sheep, cat, fowl, pigeon, goose, duck, and so on, are the important animals domesticated by men. Hence the Herbartian pedagogue says: "study them," count their legs and their tails, examine their eyes, their ears, their hair, wool, and feathers, their toes, hoofs, teeth, and so on *ad nauseam et ad imbecilitatem* after the manner of the wooden "Naturkunde" of our German friends. But it cannot be emphasized too strongly that nothing of importance attaches to these animals themselves, much less to their various parts. The fundamental thing for nature study lies in their *relation to human interests*. Even the act and process of taming is only the outward sign of the inward human need that makes the effort to tame worth the while. For the country children the endless generations of colts and calves and lambs furnish the material for this real fundamental nature study and none of the animals need be brought to school. They should remain in their normal relations as the text-books from which the lessons are learned. There need be none of the sentimentality and, indeed, very little should be made of the negative side, prominent in the very names of the "Societies for the Prevention of Cruelty to Animals." The schools should become rather wholesome societies for the positive and rational promotion of animal comfort and happiness. Much more attention could well be paid to animal domestication on account of its deep historical significance and educational value. The way Alexander the Great tamed Bucephalus by human intelligence and tact might well be the ideal, in this work, of every child and the story as told by Plutarch<sup>1</sup> should be given a place in every course in nature study.

All animals thrive better and are so much more easily managed if rationally domesticated, that the schools would be conferring a material benefit while they are thus deepening the sympathies and fundamentally civilizing the youth of the country.

While children in the country are holding fast to these civilizing relations to their domesticated animals, they could join in helping to solve the wider problems of animal domes-

<sup>1</sup>Plutarch's lives. The story is quoted in full in Benjamin Ide Wheeler's *Alexander the Great*. *Century Magazine*, Nov. 1898, p. 12.

tication which we now pass to consider for children of both city and country.

No fundamental importance attaching to the particular animal, we would not have a "school horse" or a "school cow" or other animal kept by a city to make the rounds of the schools. The relation to the life and interests of the children, which alone is the essential thing, could not possibly be established by such a superficial and wholly perfunctory contact. The fundamental thing for nature study, education, and civilization, is that the children take part in actually taming animals whose domestication meets an important human need. We should hold all that has been won that is worth while holding, and especially push forward the advance of the race by winning from untamed nature everything that may prove of assistance to human progress, whether for material resource or the purposes of biological science or art or moral culture. The *worth-whileness* of the things we keep from the past is important. That is, the present is not to be crushed under a load of useless trumpery, ancient, cast-off and outgrown armors or moulted shells. If the individual be obliged to work through all the experiments of the past he will have no energy to assist in the advance of the present. There must be, therefore, a judicious "forgetting of those things which are behind" in order to an efficient "reaching forth unto those things which are before." In other words, "prove all things; hold fast that which is good," and "press on."

Thus the crest of this wave of advance, in science, in art, in all human progress, is the most interesting and inspiring thing in the world. This crest was once the taming of the dog, then, possibly, the sheep or cow, and finally the horse. But all these conquests have been won from "untamed nature," and are submerged under an almost, if not quite, geological ocean of human progress.

I have said that very possibly the inception of these advances, the first leaping up into these wave crests, was accomplished by the plastic intelligence of childhood or youth. Certainly the twelve-year-old Alexander leaped the crest of the wave with Bucephalus ahead of the heavy adult conservatism of Philip and all his royal grooms.

For the most part, at least, the earth can be said to have been *subdued*, and thus the first part of the command has been obeyed. Obedience to but an infinitesimal part of the second part "have dominion over every living thing that moveth upon the earth" has been attained. Man has been trifling with this command long enough. He has been saying in effect, "Oh, well, Lord, of course we wish to obey you, but you don't mean this infinite swarm of insects, this army of free birds of the air,

all these disgusting and good-for-nothing worms and snails, and these wretched microbes that you have created too small to see." But the command is very specific. Science has explored land and sea, and has invented names for about 300,000 species of animals and about 200,000 species of plants. De Candolle considers 247 species as constituting a fairly complete treatment on the side of domestication of plants. Since he does not include flowers of any sort, even the rose, lily or lotus, we may do well to use Shaler's estimate of "about 1,000 plants," whose products are found in commerce, as representing the number over which man's patrial dominion extends. His own statement, however, giving "near a hundred animals" as the number of species that we have brought into this relation, is altogether too small, since we could easily name five hundred species of food fishes alone, the world over. A liberal estimate, then, is 1,000 species, each, of animals and plants with which mankind has come into more or less useful relations. According to these figures we have begun to solve, up to the present, about one two-hundred and fiftieth of our problem. This may be the easiest part, and when we consider that we are daily learning new facts about our most ancient animal and plant subjects, and when we think, further, that estimates place the probable number of insect species alone at 10,000,000, and that none of the great tropical regions have been thoroughly explored botanically, it may be within bounds to say that the race has worked out one-thousandth part of its destiny in this direction. And we may be sure that a polysyllabic binomial will not stand muster at the bar of an omniscient examiner who has set dominion over nature as the task to be learned.

We give these rough estimates for general encouragement, for the most interesting and inspiring thing in the world is to find out and know something that no one else has ever been able to discover, and in this infinite field, so soon as we leave the over-head-deep beaten ruts of dead museum methods and imbecile name-learning, when we turn toward the side of ever-changing life and action, any child may daily discover things that possibly no one else knows.

The present crest of this great wave of human control over living nature has to do with gaining dominion over the bacteria, which are causing years of sickness and the premature death before the age of forty of about half the people of the world, and over the hosts of insects which it is estimated are annually destroying half the products of our soil. With the bacteria the school children cannot do much at present, although the problem with reference to their control is on the whole simple and they should be given a clear conception of it.

To control the insects we stand in the same great need to-day

of extending practical domestication over our insectivorous animals that presented itself to prehistoric man for the taming of the horse. To practically tame, to learn to treat with care and humanity according to their value to man, many of our birds, our bats, our toads, frogs, newts, and many of our fishes, which will enable us to adequately utilize the beneficent forces in nature represented by these forms, is a great work which the children of our schools will tumble over one another to do as soon as they realize its importance. For all but the most densely populated cities, and later it might enter even there, this should form a deep and fundamentally important part of all nature study courses. And there need be no exacting strain about it on either teachers or pupils, but just the easy, natural, fundamental relation of sympathy and good-fellowship fundamental to civilized as distinguished from savage life. And in all this work with the animals indicated above the children of the land can feel that they are pressing forward the crest of the wave of human advance into dominion over, and utilization of, untamed nature to meet the greatest human need of the present.

Sentimentality has no place in nature study and may be avoided by holding the reasonable human value always predominant. A good deal is being said about nature worship being fundamental; "we must have the normal savage, before the truly civilized," etc., but it is entirely reasonable to hold that all these savage nature worships and fears that we now are able to learn anything about are matters of very recent growth, mere terminal dementias developed in an abnormal individual or in a decadent racial stock and thus have nothing to do, except to stand as scarecrows along the line of march, with the fundamental course of human advancement. Certainly a thoroughly healthy babe holds out his arms for the moon, dances in joy before the sunrise, takes snakes and toads in his hands and kisses them as he does flowers and birds, throws his arms about the neck—hale fellow well met—of the first big black dog he sees, and even screams and claps his hands with delight before the wildest displays of winds and lightnings. Of course, hysteria is contagious and the scream, or even the look of fear may leave a deep imprint on the plastic brain, which, long after the circumstance is forgotten, may be unearthed and exploited as a real psychological fossil. The great fact with reference to the brain which bears upon this point certainly is that this organ in man is specialized toward most perfect plasticity and educability. It carries not even enough ballast from the past, to hold it right side up at first. Laden with only the merest vanishings of animal instincts, the babe is born a human being, and this is coming to be recognized as the fundamental distinction between the human and the brute.

Another fundamental safeguard against sentimentality is supplied by those things in nature against which it is necessary for man to fight. It is immaterial whether we accept the evolutionary theory that deep instincts survive from the ancient struggle for life, or hold that the will to fight arises anew in each generation out of hostile experiences with nature. The fact remains that life is still in large part a struggle, and a rational nature study may well lay down as early as practicable the main lines along which the fight for human life and happiness is laid. Then, if there really are "savage instincts," they may exhaust themselves on the enemies of the race rather than upon man's best friends. There is plenty to fight a good fight against from the microbes of filth, insect pests, the vermin of fields and homes, including the English sparrow, up to individuals of their own species who develop unsocial and criminal propensities.

What has been said in favor of the broadening of human sympathies by domestication of animals should not be construed to argue against a rational indulgence in hunting and fishing, but the course should raise these wholesome sports above the level of savagery. It should aim to give practical instruction as to the breeding seasons and the natural precautions necessary to avoid exterminating our valuable game species. By thus teaching the laws of nature we might make it possible for any closed neighborhood to have its woods full of game and its waters swarming with fishes.

Of course children in cities, and to some extent in the country as well, have access to menageries and zoölogical gardens, and while such opportunities should be utilized to stimulate and broaden interest, this cannot form a very fundamental part of a nature study course, because the necessary relations between the animals and children cannot often be established. Seeing things and drawing proper conclusions does not begin to become fundamental nature study until they touch the well-springs of action in a child. And this, I repeat, is the essential thing. City children often have animal pets. If the pet cat, dog or bird be brought to school, it must be the relation between the animal and child that should form the center of interest, and we can relegate to the waste-basket all the dull business which tells us to get down on all fours and crawl about the floor (the children have passed beyond all that by the eighteenth month at latest), to count the legs and ears and toes, and we may leave all matters of comparative anatomy to the premedical course in college.

We have attempted to outline the fundamentals of animal nature study at some length, because animal relations come first in the history of the race and in the interests of the child. In



passing to discuss the fundamental considerations in plant study I will present my views very briefly, leaving the reader to supply the argument, since it is essentially similar in the two cases.

The age at which a child can first be brought into educational relations with plants largely remains for modern child study to determine. A babe of a year may show great delight in the colors and fragrance of flowers. At little more than two he may manifest a passion for planting seeds, as well as sticks and stones, for picking flowers and berries, which might call to mind the young beavers building dams with parlor furniture, were it not clearly a matter of imitation and suggestion. Probably at three or four some beginnings of intelligent interest in planting and raising simple things can be developed. Some reports have come from kindergartens where it was stated to be impossible to do this with the children at four and five, but in these cases they all planted their seeds in the same large box. With individual pots, the result would probably have been different.

At six, at any rate, *i. e.*, in the first year of primary school, children, even, who have had no previous training or home encouragement, are ready to begin *competitive rearing of plants*. No one could have observed this simple experiment as carried on in one of the Worcester schools<sup>1</sup> without being convinced of its value. In essence it is the great fundamental lesson which necessarily preceded civilization; and it may well be, either by logical necessity, or on the theory of inherited impulses, fundamentally essential to the deepest civilization of the individual. In a word, the work consisted in distributing sometime in March or April an equal number of seeds from the same package to as many children in a class as wish to enter the game. The children take them home to plant themselves. Each child promises to take the sole care of the plants, and to bring in his result, whatever it may be, at the end of the term. Prizes have been offered, but this is not an essential. Never mind about any hard names, cotyledons or integuments, or plumules or radicals or root-hairs. All these details of technical botany can be left to the college, or at any rate, to the high school. You have spread the net which is to land your child on the shores of civilization. Do not frighten him away from it. You have given lesson enough for one term. To raise any plant *best* is lesson enough for a man to work on all his life,—the lesson the race has scarcely more than begun to learn.

Here again we may encounter the wooden method which maintains that we must plant beans and corn, and again it cannot be too emphatically reiterated that it is the human relation, the feeling of the child toward the plant, not any specific plant,

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<sup>1</sup>Upsala Street School, Mary C. Henry, Principal.

which is the fundamental thing. In a region where the main human interests and values center about raising corn, beans and wheat it might be well during one or two years to let the children try raising these plants to beat anything ever seen in the township; but these things not lying as close to the lives of the children in a large city, I have chosen, thus far, easily raised flowers which could be made to bloom between April first and June tenth.

Beginning, as we must, with whole schools full of children who have never planted a seed, we must give the easiest possible things to rear to all the grades. Later we may establish a graded series of plants progressively more and more difficult to manage, beginning with nasturtiums and bachelor's buttons and ending with begonias, carnations or roses.

By making this work competitive, we scatter a whole handful of fundamental elements into it. It becomes a lively game, and games are the life of childhood, and in this play the children must use the sun itself and mother earth and air and water, the four primordial elements. It typifies on one of the higher planes the fundamental struggle for existence. This is not a mere mastery of superficial book knowledge, the relation of which to success in life children seldom appreciate. Here is a mastery of real nature, and it would seem from their sustained enthusiasm that the children sensed the idea: "if I can succeed in this I can succeed in life itself." Finally, whatever we try to do really well always becomes interesting. Unless we do put this mental and moral effort, into it, we can get no reaction of pleasure and satisfaction from our work. Without this element the rearing of their plants might become the common drudgery of a child set to work in the garden as a punishment. With it the work comes to be loved for its own sake and this love flows out and prompts to similar activities wherever opportunity offers.

The question naturally arises, how many children choose to go into such a game? and I may anticipate it by saying that in a school of about 400 pupils, all but two or three took the seeds the first year. During the two subsequent years every child in all grades took them, and with an eagerness that was in some cases pathetic.

At the end of the term the plants are all brought into the general flower show, and judges from outside the school make the awards. I confess to having had some misgivings, on account of the prizes, that there might be heartburnings, but nothing of the sort has been observed. A happier school I have never seen than this one on the three annual flower shows. It is true, as I had hoped it would be, that each child is so well

satisfied with the great lesson he has learned that the prize becomes a matter of comparative insignificance.

This lesson I consider fundamental to plant nature study; and, it should be remarked, it is fundamental to life. To grasp the idea of doing one such thing best. To learn how to throw conditions about his little plant that will cause it to grow *best* is the same idea at bottom as that of learning to surround even a human life that may be entrusted to his care, with such conditions as will insure the best possible growth, not only of body, but of mind and soul as well.

While just this competitive work is the fundamental upon which I wish to insist, during the three years of its progress it has flowed out underneath a great deal of the life of the community. By the spontaneous initiative of the pupils, a school garden has been made with beds for each grade, and the children have expressed the wish to learn how to cultivate a number of various garden vegetables and flowers on a larger scale. They have succeeded admirably so far, and have carried their flowers in quantities to a hospital near by, and have sold vegetables enough from their little plots to more than pay for their seeds. The children have also brought in and planted in their school yard a collection of wild shrubs calculated to attract birds. A better result still has been the establishment of home gardens for flowers, fruits and vegetables. The best result of all, as I have been informed by a long-time resident of the neighborhood, is that juvenile garden-vandalism, which heretofore had made life a burden, has wholly ceased.

If we are to have a civilization, we must not neglect to lay its stable foundations. If it be true, as professor Shaler maintains, that city bred people are in danger of losing those "essentials of character" gained from daily association and control of domestic animals, which he thinks helpful in preventing the country bred from "becoming savages of the lower sort under circumstances of excitement," how much more certain is it that we are raising up an army of thieves, tramps and general incapables, if we allow boys to grow up who have never planted a seed.

It has been my own practice for several years to hire tramps to work in my garden. I need not tell here of the number of things that have been destroyed, because they generally had no knowledge of the commonest garden plants. I have got them to come simply to ask them this question: Did you ever plant a seed of any kind and raise a plant? In all but one case in over thirty the answer has been, "No, Sir." The subject deserves much more thorough investigation, but such facts as I have, seem to support the view that we are facing here an absence of civilization-foundations of character. Under some

temporary stress of labor conditions the man caves in, becoming practically a wandering nomad. And the annals of crimes perpetrated by this class might enable us to follow him still lower.

To catalogue a few of the results in conclusion, a fundamental nature study of plants should result in making the school-house the most beautiful spot possible solely by the work of the pupils. It should surround each home with all the necessities and luxuries obtainable from the ground at command, and, above all, give to each child sufficient knowledge of the forces and resources of living nature, so that, if occasion require, he can make his living from the soil by actually rearing animals and plants.

For the country to infuse hope and life and interest enough to lift the work above the plane of slave labor will mean moral, mental and physical health and prosperity and will do more than all else to stem the fatal tide cityward. Sociological studies are beginning to show that the strength and virility of even city life comes in from the country. The first generation from the country become men of responsible position and skilled laborers; the second, unskilled laborers; the third, if there is any, fill the slums and swell the ranks of tramps and vagabonds. In the artificial, factory, tenement-house life of our cities we should cling to, these fundamental relations to nature as the drowning man clings to his plank.

The principle, commonly accepted, that every boy should learn a trade, important as it is, is superficial compared with these deeper biological foundations which so immediately support the whole structure of our civilization and even human life itself.

Some of the more formally educational foundations of nature study may be presented in a subsequent article.

## LITERATURE.

*Knowledge and Practice.* PROF. CHARLES SEDGWICK MINOT. The Yale University Commencement Address, June 29, 1899. *Science*, July 7, 1899.

The address treats of some of the urgent problems in medical education. Science is the basis of medicine. A great many practitioners still draw a sharp line between "theoretical" and "practical" doctors. Those who think this distinction are, of course, "practical" men, and they are guilty of a triple error: first, that scientific is theoretical; second, that theoretical is impractical; third, that practical is superior to theoretical. Research is emphasized as the leading factor in medical progress. In 1879 Koch introduced the method of solid cultures; in 1882 he published his monograph announcing the discovery of the bacillus of tuberculosis. In 1884 came Löffler's paper on the bacillus of diphtheria. In 1891 appeared Councilman's account of the amoeba of dysentery. At the International Medical Congress in 1893 Roux described the use of antitoxine in diphtheria, and about the same time McFadyean secured recognition for the value of mallein in the diagnosis of glanders. In 1896 came Vidal's reaction for identifying the germs of typhoid fever. Dramatic proof of the value of science and the laboratory method. There is a demand for laboratories in connection with every hospital. There is nothing to distinguish the scientific method from the method of every-day life except its precision. It is not a difference in kind or quality, but a quantitative difference. It is like all other search after truth, observation and reasoning. The medical course should admit more scientific training. But the course is already crowded, and the four years should not be lengthened. The only way out is to introduce the elective system on a large scale into the fourth and perhaps third year. A series of these electives should be made for advanced work in scientific subjects such as anatomy, embryology, physiology, pathology, pharmacology, bacteriology. Required studies in medicine should be reduced to the minimum, and numerous electives provided for every year of study. Among these pro-electives should be psychology in its medical aspects. The elective system is the educational answer to the tendency towards specialization in practice. Minot believes that we have no choice as to its adoption.

An earnest plea is made for the study of biology by medical men. There should be a greater inculcation of the comparative method, to which the development of biological science is mainly due. The adoption of the comparative method in medical research will be the greatest advance in medicine which our time will know. A veterinary hospital in intimate association with the school of human medicine is earnestly desired. A large part of anatomy is to the student sheer memorizing and without intellectual value. The number of lectures is too great. "Knowledge lives in the laboratory; when it is dead we bury it, decently, in a book. Now real knowledge is what the medical practitioner needs, the personal mental image of things seen, felt and heard; he needs to establish a short circuit between sensations and the true psychic concept, but if you train him to interpolate books

you are likely to make the circuit so long that there will be no true concept at the end of such a resistance path."

ARTHUR ALLIN.

*Société libre d'études pédagogiques sur la psychologie de l'enfant.* Par F. BUISSON, *Manuel Général de l'Instruction Primaire.* Paris, 4 et 18 November, 1899. pp. 477-478 and 509-511.

The numerous American friends of the child study movement will be interested to learn of the National Society for Child Study recently instituted in France. The organization is the result of a combination of forces—of university interests as represented by Professor Buisson, Compayré and Chabot; of interests in defectives represented by Mailoux; as well as of elementary school interests represented by Kahn and numerous teachers and principals of elementary schools and normal schools in Paris and in the provinces.

The purposes of the society, as stated in the constitution, are to facilitate among its members the individual and collective study of the physical and psychical development of children; to discuss and publish such investigations; and to apply the results to the work of education. The constitution provides for a central organization and local circles which shall be under the general supervision of the National Society, much after the manner of the British Child Study Association. The membership fee is fixed at two francs, and the constitution provides that at least a third of the officers must be women. The president can only be re-elected after three years, but the other officers are eligible for re-election. A meeting of the National Society must be held at least once a year.

At the preliminary meeting held in Paris November the ninth, 1893 persons joined the National Society, including such well-known names as Binet, Buisson, Compayré, Egger, Chabot, Kahn, Phillippe, Galtier-Boissière, Dreyfus-Brisac, Chauvelon, Mme. Kergomard, Mlle. Salomon, and Auguste Mailloux. The movement is headed by Professor Ferdinand Buisson, in charge of the department of pedagogy in the University of Paris, and it includes in its membership a wide range of psychological and pedagogical interests.

WILL S. MONROE.

*Psychologie der Kindheit.* Von FREDERICK TRACY. *Uebersetzt*, von J. STIMPF. Leipzig, Ernst Wunderlich, 1899. pp. 158.

Tracy's *Psychology of Childhood* is too well known to American students of children to require review in its translated form. But the introduction by the translator is such a succinct account of the American child study movement that it deserves more than passing reference. Few Germans have followed the investigations in the child study field in our country with deeper interest than Dr. Stimpf, as the introduction to this book conclusively shows. The labors of G. Stanley Hall, Wm. H. Burnham, Earl Barnes, Elmer E. Brown, F. B. Dresslar, E. Harlow Russell, C. C. Van Liew, Miss Lillie Williams and others are discussed with insight and appreciation. The view taken by Dr. Stimpf, as to the utility of child study, is the same as that held by Professor Earl Barnes and other American teachers,—that its chief value is pedagogic. Professor Tracy has written an additional chapter for the German edition of his book on the æsthetic, moral and religious ideas of children. This chapter will doubtless appear in subsequent American editions of his book. The cuts which illustrate this chapter are taken from Sully's studies of childhood, from Dr. Luken's study of children's drawings in the *Pedagogical Seminary*, and several have been reproduced from the translator's collection of children's spontaneous drawings.

WILL S. MONROE.

*The care of the baby.* By J. P. CROZER GRIFFITH, M. D. Philadelphia, W. B. Saunders, 1899. pp. 404. Price, \$1.50.

Students of childhood, and especially those interested in the physical capacity of child life, will find this book most helpful. The author has aimed to write a reliable guide for the care of young children in sickness and in health. In the opening chapter—"Before the baby comes"—he gives some sensible hints on pre-natal conditions; the second chapter presents the characteristic of a healthy baby; the third chapter discusses growth, and presents a useful chart for the measurement of the infant's weight; chapters are given to the toilet, clothes, and food of the baby, and to sleep and exercise. On the subject of sleep the author gives some sound advice, altogether too little heeded by parents. Children, he insists, should be trained to great regularity in the matter of hours of sleep; and during the growing periods of the child, there should be an abundance of sleep.

Perhaps the most useful chapter in the book is that which discusses the sick baby. It contains descriptions of the symptoms by which one may know that disease is present; concise résumés of the most common diseases of infancy; and directions for the management of various accidents, including, among others, drowning and the swallowing of poisons. In the appendix are grouped a somewhat heterogeneous collection of directions on dietary and remedies.

Although written by a clinical professor of diseases of children, the style is simple and the subject matter within the comprehension of the average teacher. Considering the wide spread pedagogic ignorance of the subjects treated, the book ought to have a large sale. It is well printed and illustrated, and has an excellent index.

WILL S. MONROE.

*The first school year: a course of study and selection of teaching material arranged by months and correlated.* By ANNA B. THOMAS. Published by the State Normal School, California, Penn'a, 1898. pp. 109.

As stated by the author, "the aim in the preparation of this book has been to aid primary teachers in the selection and arrangement of lesson materials and to offer some suggestions as to method of teaching." Correlation, according to Miss Thomas, should be along the lines of nature study, literature and history, number, language, and the arts of drawing and music. During the month of September she provides for the study of the apple, of maple, oak and horse-chestnut leaves and of the golden rod. The reading for that month includes "The sleeping apple," "The little maple leaves," "The anxious leaf," "Little golden rod," and "the origin of the golden rod and aster." Three poems are memorized—"Lady golden rod," "How the leaves came down," and "Sunny golden rod." Provision is made for little problems involving the numbers two and three growing out of the nature lessons; there is language drill and expression of the thoughts developed in the fruit, flower, and leaf studies, and the singing of simple songs that are also related to the nature work.

This little book must prove helpful to primary teachers generally. The selections for reading and singing are for the most part well made, and the pedagogic suggestions for the development of the different topics are sane and helpful. In all such work, however, one is led to question the extent to which such fixed correlations should be carried with little children.

WILL S. MONROE.

*Educational Review: a magazine of the science and art of education, and review of current educational literature and events.* Edited by WILLIAM K. HILL. London: office of the Educational Review. Published monthly since January, 1899. Annual subscription, 5 shillings.

The publication of a really professional educational review in England comes as something of a surprise, when one recalls that such publications in Great Britain (excepting, perhaps, the *Journal of Education*) have been little more than trade journals. America has had her share of cheap educational publications, but she has also had a half-dozen periodicals of high quality. Mr. William K. Hill, who is not unknown to American students of education, has placed all British students and practitioners of education under lasting obligations to him for the high character of the new *Educational Review* which he has been editing since the first of the year.

The editor has associated with him a strong corps of British educational writers, including such well known names as James Sully, C. Lloyd Morgan, Foster Watson, S. S. Laurie, H. Courthope Bowen, Francis Storr, John Russell, Henry Holman, Elizabeth P. Hughes, Dorothea Beale and Herbert B. Garrod. Eight numbers have already appeared, and the range and character of the articles commend the new publication to the American as well as to the British teaching public. Professor Morgan's excellent presentation of the claims of psychology for teachers is an admirable reply to the small chorus of writers in popular magazines who are declaiming so loudly against psychology. Professor Foster Watson, who is one of the most promising English writers on the history of education, has written for the August number a most readable article on some of the desirable reprints of old educational books.

Child study has not been neglected in the range of topics covered by the new review, and in the April issue Miss Mary Dendy has a sensible article on the individuality of the child. The reviews of pedagogical books have thus far been meager (and unsigned), but the résumés of periodical literature are admirably done, better, in fact, than in any other educational review with which the writer is familiar, and these are done by the editor himself. Indeed, these summaries of contemporary educational literature are well worth the subscription price of the magazine.

WILL S. MONROE.

*New York teacher's monographs: geography number.* Prepared by CLARENCE E. MELENEY. New York: Teacher's Monograph Co., 1899. pp. 130.

The twenty-one articles on the teaching of geography are published for "the presentation of information concerning the course of study for the public schools of Greater New York." The articles are for the most part reprints, and, averaging as they do, little more than six pages each, they are too brief to be of much practical value to teachers. The volume opens with three pages on the educational value of geography by Dr. William T. Harris, extracted from the report of the committee of fifteen. There are short articles by Professor Davis of Harvard University, Professor Hodge of the Teachers' College, and Mr. Alex. E. Frye. These are as valuable as any in the book. The contributions by Professor McMurry and Superintendent Balliet, as well as Mr. Meleney's own contributions, are to the point and helpful so far as they go; but an attempt has apparently been made to represent too many contributors within a space so limited. The articles are scrappy. One notes also the omission of bibliographic references for teachers. So many good books are now published as aids in geog-



raphic instruction that teachers might have been materially aided in having called to their attention some of the standard reference books.

WILL S. MONROE.

*The Association Review: an educational magazine published [bi-monthly] by the American Association to Promote the Teaching of Speech to the Deaf.* Edited by FRANK W. BOOTH. Philadelphia, October and December, 1899. Vol. I. Price, \$2.50 a year.

A very active educational organization is the American Association to Promote the Teaching of Speech to the Deaf. Its sixth summer meeting held the last week of June at Northampton, Mass., was one of the most interesting of the long line of summer conventions. It was decided at this meeting that the life and future usefulness of the association required some medium of expression. The establishment of a periodical, it was thought, would strengthen the work and strengthen the hands of those doing the work all over the world. The primary purpose of the association is to teach speech to deaf children; "yet," notes the editor in the initial article, "this specific purpose will in no wise limit the field of the magazine, for it is recognized that teachers of the deaf must be something more than teachers of articulation, more than instructors of a special branch or of a special subject. Teachers they must be, trained and skilled, specialists if you will, in the part or parts of the work they are called upon to do; but they must be also, with all the rest and above all the rest, educators."

There is no reason why the deaf educators should not measure up to the ideal outlined by Mr. Booth. They number many exceptionally bright minds, including such well-known names as Alexander Graham Bell, Sarah Fuller, Caroline A. Yale, A. L. E. Crouter, Joseph C. Gordon *et al.* The two numbers already published promise well. The number for October contains the following noteworthy articles: "The teacher and the State," by Professor John M. Tyler; "University experiences" [of a deaf boy], by A. Lincoln Fehheimer; "Kindergarten work in schools for the deaf," by Edward C. Rider; "Pictures and how to use them," Florence C. McDowell; a sketch of the life of Gardiner Greene Hubbard, by Gertrude M. Hubbard; an account of the sixth summer meeting with abstracts of addresses by Frank B. Sanborn, Supt. J. H. Carfrey, President A. Clark Seeley, Alexander Graham Bell, R. Mathison, and Miss Harriet B. Rogers; also accounts of the deaf department of the meeting of the National Educational Association at Los Angeles, and of the conference of the British National Association of Teachers of the Deaf.

The December number of the *Review* is below the October number in the quality of its articles. The original articles are so brief at times as to be scrappy. A review department is added to the December number. But the reviews are for the most part of institutional reports, and consist more of quotations than of comments. Better edited reviews, and these signed, would add materially to the value of the magazine. But the *Association Review* is decidedly superior to any publication representing the interests of the deaf, and it ought to appeal to a wide range of lay readers.

WILL S. MONROE.

Perhaps one of the most noticeable features of the *Addresses and Proceedings of the National Educational Association at Los Angeles, California, July 11-14, 1899*, is the amount of attention given to the subject of libraries and their relations to the school, reading lists, supplementary reading, etc. Without doubt the best paper on this subject is the one by Mr. John C. Dana, of the Springfield Massachusetts Library, entitled "The Librarian's Spirit and Methods in Working with the Schools" (515-527). If Mr. Dana's model librarian were not

so rare, the connection between library and school might be speedily settled, but unfortunately, at least in the East, he is all too rare. How many of us know the librarian who "realizes that books are tools, are not sacred things, and find their best end in being worn out by reasonable service," "is fond of children, is patient with them," "has no special card for teachers,—can lend to any person six or sixty books as easily as one, and a special card makes a distinction which by those other than teachers may be thought invidious," "has a teachers' corner in the library, and keeps there, with special books for teachers, copies of the latest pedagogical books and journals, and lends them," "always works in sympathy, and with the full knowledge of, the superintendent, and in accordance with his suggestions and wishes," "encourages teachers to borrow from the library for a few weeks, or a term," "is glad that they (teachers) make complaints, and is not disturbed by them," "discovers that their demands are generally not so much in the spirit of fault-finding as the desire to get out of the library all that can possibly be got," "encourages, rather than discourages, the asking spirit in all the teachers with whom she comes in contact"?

If the librarians throughout the country are as anxious to make their books of service to teachers and pupils, as many of these reports would seem to indicate, there would be less occasion than there seems to be for so frequently calling public attention to the subject. Mr. Dana at Springfield has undoubtedly solved the problem, and if the same liberality prevailed in more institutions in the East there would be less complaint on the part of both librarians and teachers.

One weak point in the administration of libraries is the class of men appointed on the Board of Trustees. Too often the board is made up of retired politicians or busy professional men, who have neither time nor inclination to study the needs of the public. Their chief function seems to be to see that the building is kept in repair, that the books are safely guarded, and that the appropriations are not exceeded, leaving the practical working of the library entirely in the hands of the librarian. In cases where the librarian has the true spirit this works very well; but assuming that he has not, how often do the directors interfere, or in how many cases do they feel the pulse of the reading public? Given a library, with however few books, where all are made to feel at home—there will be no lack of interest on the part of the children.

The mere fact that so important a body as the N. E. A. has taken up this question in earnest is a forerunner of better things.

LOUIS N. WILSON.

*The Psychology of Religion: An Empirical Study of the Growth of Religious Consciousness.* By EDWIN DILLER STARBUCK, Ph. D. Preface by Professor William James. Contemporary Science Series. London, Walter Scott, Ltd.; New York, Charles Scribner's Sons, 1899. pp. 420. An inferior index.

At last we have the irenicism of Religion and Science. The temper and even the explicit aim of this work are conciliatory. The author would carry over into the study of the facts of the religious consciousness the methods of inductive science. In other words, the religious consciousness is one aspect of the total consciousness, and, as such, is subject to psychological interpretation. There is nothing so startling in this point of view as the author seems to think. Dr. Starbuck really does not stand isolated upon a frowning promontory far out in a vast and unknown sea. Closer acquaintance with the methods in some theological schools would have given him a sense of community which

he seems now to lack. Even theology which he naïvely assures us have been given up to "introspection, intuition, rational analysis, and definition," has some professors who have hitched their wagons to the star of induction. One well known teacher of Systematic Theology in this country begins his lectures with the remark: "Gentlemen, at present there is no dogmatic theology; the returns have not yet come in for system-building." This is not to confuse Dr. Starbuck's particular work with that of any other person or class of persons, but merely to indicate that the inductive spirit is already at work in religious circles, and has even found its way into the consideration of the *summa philosophia* itself.

Specifically Dr. Starbuck attempts to make a statistical study of the growth of the religious consciousness. The present work is an amplification of two papers, 'A Study of Conversion' and 'Some Aspects of Religious Growth,' produced while Dr. Starbuck was a student in Clark University and published, in the *American Journal of Psychology* in 1897, January and October, respectively. Some additions of material have been made.

The material for statistical tables and critical discussion was obtained by the questionnaire method. It really consists of religious autobiographies of a few hundred persons—all (with insignificant exceptions) American Protestants of rather more than average intelligence. Conclusions, therefore, are applicable only to the religious consciousness of American Protestants.

The work falls into three parts. I, Conversion; II, Lines of Religious Growth not involving Conversion; III, Comparison of the Lines of Growth with and without Conversion. Some of the topics discussed are: The Age of Conversion, The Mental and Bodily Affections immediately Accompanying Conversion, The Conscious and Sub-Conscious Elements in Conversion, Conversion as a Normal Human Experience, Abnormal Aspects of Conversion; The Religion of Childhood, Adolescence (several aspects), Adult Life (Beliefs, Religious Feelings, Motives and Purposes); A General View of the Line of Religious Growth. Finally, a chapter of Educational Inferences is appended. Upon all these and other topics, much important and suggestive material is brought together. If Psychology, as has been said, wittily enough, is the "science of what every one knew before," then Dr. Starbuck has made a considerable contribution—but largely in the way of illustration it seems to the writer. The tables and percentages, in spite of Professor James's amiable and expiatory preface, do not seem to have other significance. Indeed that seems to be the real meaning of Professor James's somewhat misty statement.

On the whole, the interpretative phase of the work is disappointing. There is a singular lack of penetrating criticism. This is apparent throughout. Specific examples are the treatment of Faith, the Abnormal Aspects of Conversion and the Relation of Sex and Religion. For instance, apropos of the last, the author tells us that all his respondents regarded the "reproductive instinct as a hindrance to spiritual life;" but he says nothing about their specific conceptions of spiritual life, nor does he tell us what part the idea of the essential uncleanness of the sex instinct held in the thinking of the particular individual.

This lack of critical acumen is made more apparent by the garrulous prolixity of the work. The subject matter presented does not warrant such a thick volume. No concession is made to the reader's intelligence: *E. g.*, p. 408, where the author solemnly confesses that his wares in the way of pedagogical wisdom are less than he had expected. Such confidences are charming, but they are unnecessary.

Another blemish is the tedious pedestrianism of style. One wearies

of invertebrate sprawlings and longs for an occasional clear-cut authoritative utterance. Such grotesque figures as infest the book, *e. g.*, of the child drinking in habits (p. 292), and such solecisms as the one at the bottom of the same page are not excusable even in a scientific work.

It should be noted that the title of the book is a misnomer. A study of the growth of the religious consciousness of a limited number of American Protestants is not *The Psychology of Religion*. Off-hand, one would say: What of the psychology of religious dogmas, of the transcendent, of the growth (ontogenetic) of religious ideas, etc.? But as the author partially corrects the title in a sub-title, and frankly states his limited purpose in his preface, it is but fair to assume that the publishers are responsible for the pretentious caption.

The book is poor in references to collateral literature. Dr. Starbuck ignores the work of his predecessor in this field, Dr. Leuba (*A Study in the Psychology of Religious Phenomena, American Journal of Psychology* [Vol. VII]; April, 1896)—an omission that Professor James's notice in his preface does not excuse. Dr. Starbuck's reputation for originality would not have suffered by recognition of this work; and on the other hand, a probably groundless suspicion of his candor would have been obviated.

W. S. SMALL.

*Die Entwicklung des sozialen Bewusstseins der Kinder.* Von WILL S. MONROE, Professor der Psychologie und Pädagogik an dem Staatlichen Lehrerinnen-Seminar zu Westfield (Mass.), U. S. A. *Sammlung von Abhandlungen aus dem Gebiete der Pädagogischen Psychologie und Physiologie.* Herausg. von H. Schiller und Th. Ziehen, III Band, 2 Heft, Berlin, 1899. pp. 88.

In the present volume in the series of monographs edited by Professors Schiller and Ziehen, Mr. Monroe has attempted to trace the development of the social sense from the animal, through primitive man, to the child. As he shows in his introduction, germs of the social sense—instincts and feelings have their roots low down in the species. With primitive man social activities of the individual arise unconsciously, and their prevailing forms are established by unconscious adaptation even before the social mind begins to reflect on them.

And the acquisition of social interests and institutions by the race are constantly recapitulated in the child. He not only inherits social aptitudes and tendencies, but is born into a world of social forces, upon which he reacts from the hour of his birth. What these social forces are may be indicated by the chapter headings in Mr. Monroe's book: Influence of the social environment—companions, occupations, societies; Social utility of play—toys and games; Social content of school instruction—singing, history, geography; Social force of proprietary notions—money sense and rights; Discipline as a social factor—class responsibility, *esprit de corps*, punishments; Social suggestibility of emotional states—superstitions and fears.

The facts employed by the author, in this study of the social side of child life, have been gleaned from the statistical study of about five thousand Massachusetts school children. Each of the seven chapters in the book ends with a bibliography of cognate references.

*Psychology and Life.* By HUGO MÜNSTERBERG, Professor of Psychology, Harvard University. Boston and New York, Houghton, Mifflin & Co.

This work, although consisting of six essays, each of which may be understood alone without reference to the others, is to be regarded as a unity, each individual essay setting forth from a different standpoint

the fundamental conception of the whole. In the words of the preface "one fundamental thought controls the book," the chief aim being "the separation of the conceptions of psychology from the conceptions of real life," the limitation of that psychology which wrongly proclaims its results as a kind of philosophy."

If psychology is to be regarded merely as an empirical examination of the facts of consciousness as they are had by abstraction from the real unity of life, then Professor Münsterberg has undoubtedly done a service by confining it to its proper sphere. From his standpoint, which is also that of most psychologists of the present time, he has done well to call attention so forcibly to the usurpation of other fields on the part of psychology. The tendency at present seems to be to accept the results of psychological investigations as full explanation of the activities of life, and this is certainly assuming more than they are entitled to.

But in his endeavor to take psychology out of this wider field the author has so isolated it as to leave it of little or no value to philosophy. It is merely a science of transformed experience "for special logical purposes in the service of our life." As such it is of no value to philosophy. Philosophy cannot any longer remain indifferent to the results of psychological investigation, although it is permitted and required to examine the validity of these results. It is true Professor Münsterberg has not assumed that philosophy and psychology can be divorced, but it is difficult to see how, from his position, they can be brought together.

His chapter entitled "Psychology and Education" is of special interest to the readers of this periodical. His criticism of the mass of material that is paraded under the name of psychological experiments, in which evidence of irresponsible and incapable persons is made to serve scientific investigation, is indeed timely. Psychology has been so much abused in this connection that it is little wonder Professor Münsterberg has made an effort to rescue it from utter collapse as a science. But in doing so he has overstepped the mark and given psychology wholly up to mechanism, in which position it is useless for any practical purposes in education.

If psychology is to be handed over to mechanism, and this seems to be its present condition to a very large extent, no fault can be found with the conclusions of this work. But if we are to consider psychical phenomena as organic rather than mechanical, the position taken here is not quite tenable, and the criticisms lose much of their force. Neither science or psychology is any longer engaged in the study of lifeless abstractions, but living organisms. Such a conception of psychology will place it above some of the restrictive criticisms of this volume.

The main point at issue in this chapter seems to be whether the study of child nature shall come under the head of psychology, not whether the former shall be studied at all. Professor Münsterberg distinguishes sharply between child psychology and the study of child nature, recognizing fully the necessity of the latter, in which the child is to be regarded as an "indissoluble unity." He rightly says this should be done by trained experts through direct examination of the child's life.

If the essay succeeds in showing the need of more complete knowledge of child nature as it is to be seen in its normal activities, it will have served a purpose no matter what term we choose to apply to such study.

A. S. HURST.

*School Hygiene.* By LUDWIG KOTELMANN. Translated by John A. Bergstrom, Associate Professor of Psychology and Pedagogy, and Edward Conradi, Graduate Student Indiana University. Syracuse, N. Y., C. W. Bardeen, publisher, 1899. pp. 391.

The excellence of the German edition of this hand-book of school hygiene has already been noticed in the *Ped. Sem.* The English translation by Dr. Bergstrom has been made from an improved edition specially prepared by the author for this purpose, and hence it comes to pass that the translation forms a more valuable work than the original; for much new and important material has been added. The translator has done his work with the care and accuracy characteristic of the thorough student, and has added an interesting introduction and a valuable bibliography. With such a work accessible in English there is no longer any excuse for teachers if they remain ignorant of the fundamental teachings of school hygiene. That the publisher has not done his part as well as the author and translator should not deter students from buying so valuable a book.

W. H. B.

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## BOOK NOTES.

G. S. H.

*Die Entwicklung vom Sprechen und Denken beim Kinde.* Von WILHELM AMENT. Leipzig, E. Wunderlich, 1899. pp. 213.

This is a work of great value and thoroughness, abounding in tables and charts representing the development of the first two hundred ideas of a child. The author has read widely the literature of child study, and even gives a twenty-page history of it, including the American movement. Baldwin's "Mental Development in the Child and the Race" is criticised as abortive, ja "nicht geglückter Versuch." The development of the sentence, its form, meaning and stylistic qualities, is the most interesting and suggestive part of what we must recognize as one of the most careful and labored efforts of the modern child study movement. The author worked under the influence of his teachers, Professor Külpe and Docent Marbe, and his work was partially controlled by Professors Brenner and Jolly. The observations were made with unusual care and method on several children.

*Notes on the Development of a Child. Parts III and IV.* By MILICENT W. SHINN. University of California Studies, Vol. I, Nos. 3 and 4. Berkeley, 1899. pp. 179-424.

This is number 3 and 4 of the author's Notes on the Development of a Child, 1 and 2 of which were published some years ago. The printing of this is made possible by the liberality of Mrs. Phoebe Hearst. An interesting article on "Children's Drawings," by Elmer E. Brown, is appended. The topics here treated are—sensations of muscular activity, motion and position, organic sensations, spontaneous reflex and instinctive movements, use of the right and left hand, equilibrium and locomotion, instincts connected with food taking, and common reflexes.

*Transactions of the Illinois Society for Child Study.* Vol. IV, Nos. 1-2, The University of Chicago Press, Chicago, Ill., April-July, 1899.

We are glad to see that Professor Colin A. Scott has resumed the

publication of this valuable quarterly; with its strong advisory board and its high standard its success ought to be assured. The best articles in this number are by W. S. Monroe: Play Interests of Children, G. E. Dawson: Suggestions as to the Basis of a Sunday-School Curriculum, and F. Hall: Comparisons of the Imaginative Powers of Blind, Deaf and Normal Children.

*Addresses and Papers.* Proceedings of the New Jersey Association for the Study of Children and Youth. Spring meeting, 1899. The Brotherhood Press, Bloomfield, N. J., 1899. pp. 68.

This attractive pamphlet, consisting of eleven articles and reports, marks the origin of one of the best organized and equipped State associations for the study of children and youth. In the list of members are included most of the prominent names in the State. Special credit is due Dr. James A. Green, Principal of the State Normal School, Trenton, and Miss Lillie A. Williams, Professor of Psychology in the same institution. The pamphlet is not only a valuable addition to the literature of the subject, but a good *vade mecum* for those interested in organizing such institutions.

*Child Study Record.* By THEO. B. NOSS. California, Pa., 1899. pp. 26.

The principal of the Southwestern State Normal School in Pennsylvania has here given an invaluable and very cheap little volume summarizing the results as well as the methods and aims of child study in a very condensed and admirable style, and giving blanks for recording well selected points in the early stages of child development.

*The Paidologist.* Nov., 1899, Vol. I, No. 3. Cheltenham, England.

The Paidologist has excellent articles on Exceptional Children, Hearing as a Factor in the Education of a Child, a very interesting article on Children's Autobiographies, by Sara E. Wiltse, Girl's Games in London, and a somewhat scathing review of Münsterberg's treatment of child study by Professor Langdon Down.

*Psychogene Störungen der Schulkinder.* Von ALFRED SPITZNER. E. Ungleich, Leipzig, 1899. pp. 45.

This is an interesting chapter in pedagogic pathology describing various abnormalities of psychic and nervous development in children, with certain suggestions as to the most effective mode of removing them.

*Education of the Pueblo Child. A Study in Arrested Development.* By FRANK C. SPENCER. Columbia University Contributions, Vol. VII, No. 1. New York, The Macmillan Co., 1899. pp. 97.

This thesis describes the geography, history, social, industrial, institutional, religious and educational life of the Pueblo Indians, to show that they have degenerated below their former state, and to-day represent the characteristic features of arrest. It is a careful and interesting study based on wide acquaintance with literature and on careful study of the Pueblos on the spot.

*Child Life in Colonial Days.* By ALICE MORSE EARLE. The Macmillan Co., New York, 1899. pp. 418.

In this charming book Miss Earle has summarized her very wide and careful reading upon this subject, and gives over one hundred illustrations of it. When we reflect how little is generally told of child life in history, and how indirect and non-literary many of these sources are, it is surprising to see what very interesting chapters are written

on the details of babyhood, children's dress, school life, school books, discipline, manners, religious training, needlecraft, games, toys, flower lore, precocity, diaries, etc.

*Some Defects of the Kindergarten in America.* By G. STANLEY HALL. The Forum, Jan., 1900, Vol. XXVIII, pp. 579-591.

The writer of these notes attempts in this article to state the kindergarten doctrine which he believes Froebel would himself approve were he to return to-day. It is largely critical of the metaphysical tendencies of kindergarten education and advocates some attention to evolution in a field where it is now almost absolutely unknown or despised, but where it has more practical application than anywhere else, and also to the rudiments of science.

*The Spoilt Child: A Tale of Hindu Domestic Life.* By PEARY C. MITTER. Translated by G. D. Oswell. Thacker, Spink and Co., Calcutta, 1893. pp. 234.

This is a very unique educational novel describing Matilall, an eldest son, through a long series of characteristic experiences illustrating how not to do it. He is a very bad child, who bit his teachers, was arrested by the police, and was made bad by faulty education, but finally reforms. It is a very interesting picture of Hindu life.

*Stalky and Co.* By RUDYARD KIPLING. Doubleday and McClure Co., New York, 1899. pp. 310.

This is a story of boy life, hard to characterize in brief space, but in which evidently personal reminiscence plays an important part, and which is sure to take a high rank among the books of its kind. It would be hard to find since "Tom Brown at Rugby" another book which leaves one so strongly convinced that the studies and recitations in a school make up only a small part of its sum total of educational influence, but it is brutal.

*True Motherhood.* By JAMES C. FERNALD. Funk and Wagnalls Co., New York and London, 1900. pp. 112.

This is a somewhat light but very plain and concise group of eleven brief chapters on the preciousness of home, its light, training for maternity, the blessing of the promise, the mother's care, presence, love, and a world of homes. All girls should be educated to motherhood, for that only is liberal as distinct from professional training for them.

*Through Boyhood to Manhood.* By ENNIS RICHMOND. Longmans, Green and Co., London, New York and Bombay, 1899. pp. 194.

This is an interesting work written in a more or less conversational way, and is mainly a plea for three ideals—unselfishness, self-control and purity.

*Sittliche Erziehung.* Von J. KOOISTRA. E. Wunderlich, Leipzig, 1899. pp. 100.

This writer considers affectionateness, repose, justice, joy, uniformity of mood and firmness to be the chief qualities of the teacher that are concerned in moral education. The relations between school and house are next considered, the virtue of work and order, poetry in child life, the culture of song, gratitude, the way to treat moods, irascibility, the stork question and St. Nicholas, the theater, competitive methods, the many uses of suggestion by the teacher, secrets, ser-



vants, threats, rewards, the many different kinds of punishment, honor, the education of girls:—these are the chief topics in an admirable and very condensed pamphlet which ought to be translated into English at once, where it would fill an unique place.

*Heidi: A Story for Children and Those That Love Children.* By FRAU JOHANNA SPYRI. Translated by Helen B. Dole. Ginn and Co., Boston, 1899. pp. 363.

This novel is divided into two parts. The first describes Heidi's years of learning and travel, and the second part describes the use she makes of what she has learned. The characters and situation are typical, and the work has the high merit of really interesting both children and adults.

*Tales Told Out of School.* By EDWARD S. ELLIS. C. W. Bardeen, Syracuse, N. Y., 1899. pp. 240.

Ninety per cent. of these twelve tales, the author says, are true. Each chapter characterizes Dick, Jack, Bill, Tommy, Joe, and Sam respectively, with characteristic incidents. Such material cannot fail to be of interest because it is of children, but they are the more so because the tales are well told.

*Ueber Frauenbildung.* Von DR. SCHULTZE. Ueber Frauenarbeit, von Dr. Stöcker, Berlin, 1899. pp. 63.

This is a somewhat progressive discussion of woman's education. The court preacher, Stöcker, who became widely known from his anti-Semitic, polemic views some years ago, has here gathered comprehensive figures to show that women, especially in the middle classes, are more and more commonly taking up men's work. Very interesting and diverse are the opinions of various German women concerning the woman movement, which are printed as an appendix at the end.

*The Psychology of Woman.* By LAURA MARHOLM. Translated by Georgia A. Etchison. Grant Richards, London, 1899. pp. 295.

This is the first treatise on this subject by a woman, and this, of itself, makes it a contribution of interest if not of value. Catholic and Protestant women are considered. Of special interest are the chapters on three generations of women, the attempts for happiness, the history of women's illnesses, anxiety, seekers, the man question. The author contemplates another work devoted solely to sexual psychology.

*Kalognymia or the Laws of Female Beauty; Being the Elementary Principles of that Science.* By T. BELL. The Walpole Press, London, 1899. pp. 331.

This work is published in a limited edition of one thousand copies only, and describes the characteristics of female beauty in various lands, the origin, influences, periods, and economy of love and sexual activity, and in the last chapter discusses monogamy, polygamy, prostitution, etc. It is anything but a scientific book, and deals with vague generalities and common places. It is difficult to see the utility or justification of this treatise.

*A Student's History of the United States,* by EDWARD CHANNING. The Macmillan Co., New York, 1899. pp. 615.

This text-book with plenty of maps and illustrations begins with the Icelandic discovery in the year 1,000 and ends with the close of the late Spanish War. The author is professor of history in Harvard.

*The New Humanism. Studies in Personal and Social Development*, by EDWARD H. GRIGGS. New York, 1900. pp. 239.

These ten lectures are on the higher human life, the evolution of personality, the dynamic character of personal ideals, the content of the ideal of life, positive and negative, Greek and Christian, womanly and social, ideals, the ethics of social reconstruction, the religion of humanity. The author of these lectures, published by himself in an attractive volume, is full of the best blood of idealism and might almost be called ideal intoxicated. He seems a pure soul smitten with the love of the beautiful, the good, the true, who lives in the masterpieces of Greek tragedy, Dante, Goethe, Arnold, and all the rest, and to be a fervid and eloquent preacher of the ideal in art, literature and society, but with little knowledge of or interest in science and with greater power of appreciation than of criticism.

*Desiderius Erasmus of Rotterdam*, by EPHRAIM EMERTON. G. P. Putnam's Sons, New York and London, 1899. pp. 469.

This is a thorough going and long desired life of one of the great educators of the world by the Harvard professor of ecclesiastical history. In some respects as in showing his many deceits, Erasmus is disenchanted by this story, but his true greatness is sufficient to triumph even over this exasperating fault and to incline us to leniently take account of the age in which he lived.

*Port-Royal Education: A Sketch of its History with Extracts from its Leading Authors*, by FÉLIX CADET. C. W. Bardeen, Syracuse, N. Y., 1899. pp. 406.

The one hundred and nine pages of history of the Port-Royal schools give a charming idea of their personnel, theories and methods. The extracts from seventeen of the leading writers are on the whole well chosen and in order to illustrate the main points made by the history.

*History of Education*, by LEVI SRELEBY. American Book Co., New York, Cincinnati, Chicago, 1899. pp. 343.

This is the briefest, most concise, and comprehensive of all the histories of education, and hence it has its place. As a kind of primer of the subject, it begins with China, India, Persia, and the Jews, and ends with Horace Mann, and the systems of Germany, France, England, and the United States.

*An Outline of the History of Educational Theories in England* by H. T. MARK. C. W. Bardeen, Syracuse, N. Y., 1899. pp. 139.

This interesting history is written from a broad point of view and begins with educational movements in England in the Middle Ages. The tendencies and personages of the renaissance in England constitute a second chapter; the theories of physical education a third; the unfoldment of ideals of intellectual, practical and moral education fourth, fifth and sixth chapters. It is not only thoroughly sensible, but is also learned and readable as so few educational books are.

*Method in Education*, by RURIC N. ROARK. American Book Co., New York, Cincinnati, Chicago, 1899. pp. 348.

Professor Roark, known also for his "Psychology in Education" on which this is founded, here gives us with much detail what he deems the proper method of teaching, reading, spelling, object lessons, geography, history, civics, physiology, number, grammar, language, and character. For all who like to paraphrase Mark Hopkins, for all

who like this kind of a book, it is just the book those people will like. I know of nothing better, however, at present in this dreary field; but what a book might now be written here.

*Theory and Practice of Teaching, or the Motives and Methods of Good School Keeping*, by DAVID P. PAGE. Edited by E. C. Branson. American Book Co., New York, Cincinnati, Chicago, 1899. pp. 382.

This well known standard book more than half a century old is edited anew with many minor changes, and strange to say the editor has taken the liberty of introducing an entire chapter of his own as if it were Page's. The leading topics are the teacher's spirit, fitness, responsibility, habits, literary attainments, methods, government, arrangement, rewards.

*Reading: How to Teach It*, by SARAH LOUISE ARNOLD. Silver, Burdett & Co., Boston, New York, Chicago, 1899. pp. 288.

This book has a tasteful exterior but no index whatever. The writer asks why we read, tells how to teach this art, how to study and prepare, gives several plans of work with illustrations and directions on the use of the library. Nearly forty pages of books that have been tested and found helpful in the school-room are appended.

*Lucifer: A Theological Tragedy*, by GEORGE SANTAYANA. Herbert S. Stone & Co., Chicago and New York, 1899. pp. 187.

Professors Santayana of the Harvard philosophical department here attempts the most ambitious and heaven storming tragedy in history. Its characters are the risen Christ, the archangel Michael, St. Peter, Lucifer, Mephisto, Azazel, Belial, Zuse, Hermes, Ares, Athena, Aphrodite, together with saints, devils, witches, goddesses, etc. In the general mix up of heaven and hell, Semitic and Aryan characters, it is pleasing to see that the characters preserve their equilibrium, talk far more dignified language than do the characters in "The Boat-House on the Styx," and in the end most of the others are greatly impressed with Christ.

*Friends and Helpers*. By SARAH J. EDDY. Ginn and Co., Boston, 1899. pp. 231.

The object of this book is to teach children to treat all living creatures kindly. It consists mostly of animal stories gathered from quite a wide range of literature, interspersed with still more from sources not given. The pictures are mostly extremely life-like, but the selections might be greatly improved upon. The book seems to be a tendence work, the object of which is anti-cruelty and the formation of bands of mercy.

*Ways of Wood Folk*. By WILLIAM J. LONG. Ginn and Co., Boston, 1899. pp. 205.

The author is a lover of animal life, and infects his readers with his own zest and interests them in his own experience. Fifteen animals and birds are treated in as many chapters in a breezy, natural out-of-door way.

*Wild Animals in Captivity*. By A. D. BARTLETT. Chapman and Hall, Ltd., London, 1899. pp. 373.

The author was for many years curator of the Zoölogical Garden in Regent's Park, London, and had a rare acquaintance with the animals

it contained. He was not a scientific man, but originally a taxidermist, but his book abounds in new and striking observations and in interesting incidents.

*Initial Study in American Letters.* By HENRY A. BEERS. The Chautauqua Press, New York, Cleveland and Chicago, 1899. pp. 221.

These are careful and discriminating essays on (1) the colonial, (2) the revolutionary period, (3) the era of national expansion, (4) the Concord writers, (5) the Cambridge scholars, (6) literature in the sixties, and (7) literature since 1861.

*Primitive Love and Love-Stories.* By HENRY T. FINCK. Charles Scribner's Sons, New York, 1899. pp. 851.

Mr. Finck's work on Romantic Love and Personal Beauty, Wagner, Chopin, and various travels, here gathers from many sources sentiments and theories on jealousy, coyness, adoration, personal beauty, specimens of love among the native African, Australian, Pacific Islanders, Indians, and other wild tribes, and attempts to co-ordinate all this rich and varied but very imperfectly organized material under the general principle of evolution. The subject itself, however, is sufficient to assure great interest.

*L'Instinct Sexuel Évolution et Dissolution.* Par CH. FÉRÉ. F. Alcan, Paris, 1899. pp. 346.

This study of evolution and dissolution is broader than most books upon the subject, although it is mostly devoted to abnormal manifestations. The best chapters are those devoted to sexual education and hygiene and on the responsibility of this instinct. Morbidities of parental also of animal love are discussed.

*Die Erkrankungen der Sprechstimme, ihre Ursachen und Behandlung nebst einer kurzen Hygiene für Lehrer, Geistliche, Advokaten und Offiziere,* von R. KAFEMANN. A. W. Kafemann, Danzig, 1899. pp. 48.

This is a very convenient primer of the more important points that bear upon the hygiene of the speaking voice and is designed at the same time for teachers, clergymen and other public speakers. It is by an expert laryngologist.

*Schulgesang und Erziehung,* von HEINRICH SCHÖNE. E. Wunderlich, Leipzig, 1899. pp. 63.

Herr Schöne here addresses teachers, parents and musicians with a plea for greater interest in musical education for its moral and other educational influences. Singing, he thinks, is its best form and describes the effect of such an ideal as his upon political and religious life.

*The Child Voice in Singing,* by F. E. HOWARD. Novello, Ewer & Co., New York, 1898. pp. 138.

This is a convenient digest of voice physiology, registers, compass, etc., with plenty of directions as to how to secure a good tone and to articulate. Interesting chapters also are included on mutation and the alto voice in male choirs.

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